



July 29, 2019

Re: Lesni Efficiency Test 2019

Mr. Ariel Gonzalez

Environmental Health and Safety Manager
Boston Scientific/Guidant Corporation
Road 698 Lot No. 12
Dorado, PR 00646-2602

Dear Mr. Gonzalez:

Attached is one copy of the final test report for the above referenced testing program. We understand that you will submit the required copies of the protocol to the Puerto Rico Environmental Quality Board for review. Should there be any questions concerning the enclosed protocol, please contact me at (484) 252-4335.

Respectfully,

L. Christopher Heilner

L. Christopher Heilner, QSTI
Owner, LCH Consulting Associates, LLC

PR EQB Permit PFE-26-1114-1195-1-11-O
Compliance Test Report

2019 Lesni Efficiency Test

**Boston Scientific
Road 698 Lot No. 12
Dorado, PR 00646-2602**

July 29, 2019

Prepared for:

Mr. Ariel Gonzalez
Environmental Health and Safety Manager
Boston Scientific/Guidant Puerto Rico BV
Road 698 Lot No. 12
Dorado, PR 00646-2602

For submittal to:

Luis R. Sierra Torres, PE
Chief Inspection and Compliance Division
Air Quality Area
Puerto Rico Environmental Quality Board
Air Quality Division
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Prepared by:

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CERTIFICATION OF ACCURACY AND COMPLETION

I, Mr. L. Christopher Heilner, as the LCH Consulting Associates report author, certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment, or both, for submitting false, inaccurate, or incomplete information.

Signed: L. Christopher Heilner Date: 8/6/19

L. Christopher Heilner, QSTI
Owner
LCH Consulting Associates
Telephone: (484) 252-4335

1.0 EXECUTIVE SUMMARY

Boston Scientific Corporation (BSC) is the leading manufacturing facility producing drug-eluting collars, drug-eluting stents and the leads that treat cardiac arrhythmias and heart failure. The facility uses ethylene oxide to sterilize their products prior to shipment and thus must maintain stack test results. This stack test and report aim to satisfy the permit requirements. LCH Consulting Services, LLC (LCH) of Pottstown, Pennsylvania, has been retained to prepare the protocol, perform the compliance stack test and this resulting final test report. The following provides contact, facility, permit, and source information:

1.1 CONTACT SUMMARY

Facility (BSC) Responsible Official

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Stack Test Contractor

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Owner
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88 Glocker Way PMB 287
Pottstown, PA 19465
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chris@lchconsulting.com

1.2 PERMIT AND SOURCE SUMMARY

1.2.1 Applicable Regulation – 40CFR63.360 Subpart O: Ethylene Oxide Emissions Standards for Sterilization Facilities

Permit Number – PFE-26-1114-1195-1-11-O

Process Description – Ethylene Oxide Sterilization Support Manufacture of Medical Devices, comprising; two sterilization chambers to pre-condition, sterilize and aerate product and one LESNI A/S catalytic abatement system

Sterilization Chamber Description – # Getinge chambers, G-1 and G-2; each of 2.81 cubic meter construction and G-3 of 3.62 cubic meter construction using approximately 48 pounds of Ethylene Oxide total (3cycles/day, 4 pounds per cycle, 3 chambers) and heated using steam.

LESNI Catalytic Abatement System Description – Packed compact tower with sump water tank “balancer” and abator catalytic oxidizer.

Control Efficiency – 99.0% removal efficiency – The Lesni system resulted in 99.998% removal efficiency by Subpart O calculations and 99.96% removal efficiency by on a ppm basis determined by onsite Method 18 Gas Chromatography. These results are available in Tables 1&2 following as well as Attachment E.

Compliance Parameter – Oxidizer chamber temperature maintained above 140°C (284°F) or manufacturer's recommended temperatures. – The Lesni system records chamber bed temperatures at the inlet and the outlet. At no time during testing or use did either temperature fall below 140°C (284°F). Average inlet temperatures for each test day were 158.35°C and 158.06°C respectively. Average Outlet temperatures for each test day were 174.12°C and 186.24°C respectively. These results are available in Attachment G.

Stack Test Summary – 3 sterilization chambers (without product inside) were cycled to sterilant removal and held. When both chambers were ready, they were concurrently evacuated into the LESNI system. The sample run was the duration of the entire first evacuation sequences of both chambers for strict Subpart O adherence. Additionally, because of the use of the LESNI balancer system, the LESNI inlet and outlet location was monitored for the duration of one hour. During the sample run, concentrations of ethylene oxide and volumetric flow rates were determined at the outlet of the LESNI system by GC FID. Inlet concentrations were determined by calculation and GC PID. The following were the test methods used:

USEPA Method 1 – Sampling Point Determination and Cyclonic Flow Checks

USEPA Method 2 – Volumetric Flow Rate Determination

USEPA Method 3 – Stack Gas Molecular Weight Determination

USEPA Method 18 – Volatile Organic Compound Determination by Gas Chromatograph

Subpart O 40CFR63.365 (b) – Calculations

Test Date – June 13 and 14 of 2019

Table 1 Subpart O Destruction Efficiency Calculations

Table 1 – Summary of Results Lesni CatOx Performance Test Boston Scientific, Dorado, Puerto Rico June 13-14, 2019									
Run	Date	Chamber	Mass EtO Charged to Chambers (pounds)	Percent Chamber Gas Evacuated (%)	Scrubber Outlet Gas Volume (dscf)	Scrubber Outlet EtO Concentration (ppm)	Mass of EtO at		DRE (%)
							Scrubber	Scrubber	
1	6/13/2019	1	4.2	84.80%	3513.7	1.0	3.55	0.00040	99.996%
		2	4.4	84.88%			3.73		
		3	8.3	84.61%			7.01		
		total	16.9				14.29		
2	6/14/2019	1	4.3	84.79%	2689.2	1.0	3.64	0.00031	99.997%
		2	4.4	84.93%			3.73		
		3	8.8	84.68%			7.44		
		total	17.5				14.80		
3	6/14/2019	1	4.6	84.66%	3357.4	1.0	3.89	0.00038	99.996%
		2	4.3	84.83%			3.64		
		3	8.3	84.62%			7.01		
		total	17.2				14.53		
Average Removal Efficiency								99.997%	

Table 2 Destruction Efficiency Results from Onsite Measurements

Table 2 - Summary of Results Lesni CatOx Performance Test Boston Scientific, Dorado, Puerto Rico June 13-14, 2019						
Run	Date	Start Time	Time End	Average Concentration, (ppm)		Removal Efficiency
				Inlet	Outlet	
1	6/13/2019	13:53	15:05	1210.0	1.0	99.92%
2	6/14/2019	1:31	2:31	1690.4	1.0	99.94%
3	6/14/2019	8:57	9:57	1704.6	1.0	99.94%
					average	99.93%

2.0 PROCESS DESCRIPTION

Three chambers manufactured by Getinge AB are used to sterilize medical products. The in-chamber sterilization cycle includes pre-conditioning, sterilization and aeration. The typical cycle for sterilization includes four vacuum and nitrogen injection pulses to remove air, injection of clean steam for humidification, ethylene oxide charge, injection of additional nitrogen, three nitrogen washes i.e. evacuations all of which are vented to the Lesni system. Process run records are available in Attachment F.

The LESNI system provides “state of the art” pollution control with a balancer and an abator. The balancer consists of a vessel of water and a packed tower. Water is recirculated through the packed tower where ETO desorbs at a steady rate and for transport to the balancer. Sterilization chamber vent (SCV) gases are sparged directly into the balancer. Concentration at the inlet of the abator are expected to be in the low thousands of ppm to hundreds of ppm.

LESNI maintains a catalyst bed temperature of 150°C (302°F). During normal operations outlet bed temperatures can reach over 400°F due to the exothermic reaction of ETO destruction. A data logger will record inlet and outlet temperature readings for submittal with the final report. Data will be maintained on-site for a five year span. Lesni catalyst bed temperatures are available in Attachment G.

3.0 SCOPE AND OBJECTIVES

The objective of the testing program was to satisfy the PR EQB Permit PFE-26-1114-1195-1-11-O initial and ongoing compliance testing requirements and to determine compliance with

regards to applicable permit allowable limits. Allowable permit limits are summarized and compared to the stack test results on the preceding page in Tables 1 and 2.

The performance of the Lesni system was determined by testing the sterilization chamber vent. The highest concentration at the abator occurs at the start of the initial evacuation. The test procedures of 40CFR63.365 (b) are suitable to demonstrate the compliance status of the Lesni. 63.365(b) reads: "*Efficiency at the sterilization chamber vent. The following procedures shall be used to determine the efficiency of all types of control devices used to comply with 63.362(c) sterilization chamber standard.*"

Subpart O was written based on technologies that destroy ETO immediately as it is exhausted from the chamber. With the Lesni system, ETO enters the balancer, dissolves in water and is released slowly over time for metered destruction in the catalytic oxidizer. ETO from the first evacuation is still mostly in solution when it is completed. To best represent the ETO abatement system and after discussion with EQB and BSC the following procedure was agreed upon. Balancer outlet (same as CatOx inlet) and CatOx outlet concentrations were monitored from the first evacuation of the first chamber for the duration of one hour. Volumetric flow was determined on a minute basis from the beginning of the first evacuation until the completion of the final evacuation. This was between 17 and 18 minutes. Moisture was reported as saturated at the Lesni balance outlet temperature.

EPA test methods strive to demonstrate performance under a worst case scenario. The facility operated at normal maximum loading for the performance test. BSC used a cycle with no product in the chamber and sampling only pre-aeration cycle phases is the most conservative in terms of loading as there is no product mass or product packaging to retain ETO. This results in more ETO coming from the first purge cycle as compared to a cycle with product present.

4.0 FIELD TESTING PROGRAM

4.1 Testing Location and Traverse Points

Sampling for the LESNI was conducted at the outlet of the Lesni Abator. The location was accessed via ladder. Two ports were used, maximum 8 points per port resulting in a maximum sixteen point traverse. The stack inside geometry was determined for Method 1 compliant traverse points. A preliminary traverse yielded the point of average velocity. This point of

average velocity was used for flow determinations during each sampling run. This data is available in Attachments E, H and I.

4.2 Testing Summary

Testing was conducted according to the U.S. EPA Federal Register 40 CFR 60 Appendix A. The following procedures will be utilized at the LESNI exhaust stack.

Procedures¹

- | | |
|------------|--------------------------------------------------------------|
| Method 1: | Sample and Velocity Traverses for Stationary Sources |
| Method 2: | Determination of Stack Gas Velocity and Volumetric Flow Rate |
| Method 3: | Determination of Stack Gas Molecular Weight |
| Method 18: | Volatile Organic Compounds by Gas Chromatography |

Three test runs were performed for each emission parameter. Some emission parameters where possible, were determined concurrently. All test runs include concurrent gas flow rate determinations by EPA Methods 1, 2, and 3. Regarding Method 3 sampling, this protocol also presents the option to use the molecular weight of 29.00 for test parameters as the chamber atmosphere is essentially ambient air heated thermoelectrically.

Gas flow rate determined by EPA Methods 1, 2, and 3 concurrently with emissions sampling were used to calculate lb/hr emission rates. This information available in Attachment E.

The average of the three test runs were compared to the allowable emission limits to determine compliance.

Detailed descriptions of the sampling trains, analyzers, and procedures are provided in Section 4.4.

Equations that will be used for test calculations are presented in Attachment A.

4.3 PROCESS OPERATIONS AND EMISSION TESTING

During each sample run the following process data were confirmed

1. Catalyst Bed Temperature

¹Source: U.S. EPA, *Federal Register*, Title 40 Part 60, Appendix A

2. Amount of Ethylene Oxide Charged
3. Sterilization Cycle Parameters
4. Sterilization Chamber Conditions

This information is available in Attachments F and G.

4.4 SAMPLING PROCEDURES

The following sections provide descriptions of sampling procedures and the sampling trains that were used for emissions testing.

4.4.1 Gas Flow and Temperature Measurements

Gas flow rate and temperature profiles was measured by conducting velocity and temperature traverses simultaneously with each sampling parameter. Gas velocity heads was measured with a Type-S Pitot (preliminary and cyclonics) or Standard Pitot (velocity) tube connected to an inclined manometer. The static pressure was measured using the same Pitot tube and manometer. A Chrome-Alumel thermocouple attached to a digital indicator was used to measure the gas temperature at each traverse point.

Cyclonic flow checks were conducted at the test location according to EPA Method 1, Section 11.4. Flow was considered non-cyclonic because the average flow angle was less than 20 degrees. Results will be available to the EQB onsite observer and will be included in the final report.

This information can be found in Attachment H.

4.4.2 Oxygen and Carbon Dioxide Emission Concentration Determinations

Oxygen (O_2) and carbon dioxide (CO_2) emission concentrations could be determined by EPA Method 3 *Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources*. Oxygen and CO_2 emission concentrations were used primarily for the determination of gas molecular weight required for gas flow rate calculations. For this reason we did not perform any actual molecular weight determinations and Method 3 was used to assign a molecular weight of 29.00, which is thought to be appropriate as this is essentially thermoelectrically heated air. Molecular weight will be the same at the inlet and the outlet and thus cancel each other out for destruction efficiency calculations.

4.4.3 Determination of Ethylene Oxide Emissions

Procedures outlined in 40 CFR 60 Methods 18 and Subpart O 40CFR63.365 (b) calculations will be used to determine Ethylene Oxide emission concentrations, and are discussed as follows:

ETO samples were collected and analyzed using the Direct Interface Sampling and analysis procedure of Method 18 section 8.2.2. An un-heated Teflon sample line and stainless steel sample probe was placed in the abator outlet stack connecting to a Teflon lined diaphragm pump. A sample rate of approximately 2 liters per minute was established. A slip stream of approximately 10 milliliters per minute of the sample as connected to the gas chromatograph sample loop. An analysis was conducted once per three minute interval for the duration of the first evacuation and for 60 minutes resulting in 21-22 chromatograms per sample run.

4.5 SAMPLE ANALYSES

All samples were analyzed onsite by L. Christopher Heilner, QSTI of LCH operating a GC FID and PID. All QA/QC measures inherit to the analyzer and the methodology were followed.

4.5.1 GC Description

Samples were analyzed by gas chromatography using a SRI 8610C gas chromatograph with dual column, dual detector (PID and FID) with heated sample loops, injectors and 3 meter packed columns. Gas in the sample loop was injected directly into the GC's analytical columns by the gas sampling valve. The GC was operated with carrier gas flow of 18 ml/minute and column temperature of 100°C. The carrier gas was ultra-high purity helium. Hydrogen and air was used to maintain the FID. ETO will elute at 1-2 minutes.

4.5.2 Calibration Standards

Five cylinders of calibration standard, ETO in nitrogen, in concentrations of 1.0, 10.0, 100.0 and 987 ppm were used to create a calibration curve to calculate ETO concentration in ppm given instrument response in millivolts. The FID calibration curve was generated using 1.0, 10.0 and 100.0ppm standards. The PID calibration curve was generated using 10.0, 100.0 and 987ppm standards. Calibration standards were analyzed in triplicate and the average value of the samples will be calculated. An analytical result was considered valid if its value is within 5% of the average value. Calibration curves are found in Attachment B. Calibration standard certificates are found in Attachment J.

A calibration curve was generated using Microsoft Excel chart function by constructing a linear XY-Scatter graph that solves the quadratic equation of the line $Y=mX+b$ where “y” is the calculated concentration of EtO, “x” is the instrument response, “m” is the constant and “b” is the y-coordinate intercept. The option forcing the graph through zero will be enabled so “b” = zero. The least squared R^2 value and the equation of the line was shown. An R^2 value of 95% is acceptable according to Method 18. The gas chromatograph routinely exceeds the 95% R^2 value. The GC/FID showed a 100.00% R^2 value. The GC/PID showed a 99.75% R^2 value. This information is found on the calibration curve in Attachment B.

4.5.3 Chromatograms

The chromatogram log sheet is a Microsoft Excel spreadsheet that transposes run information in an easy to read format and also provides the calculating capabilities to assess the QA/QC requirements of the method. The chromatograms were logged by the file path directory of the hard drive storage. This information is found in Attachment C.

The chromatograms were automatically printed at the conclusion of each analysis in .pdf format. Each chromatogram includes information identifying the type of analysis, i.e. set up, calibration, sample, recovery study, date and time of analysis, comments, retention time and integrated peak area. The results are in units of millivolts. Field corrections initiated by the operator were not necessary. The chromatograms can be found in Attachment D.

4.5.4 QA/QC Measures

4.5.4.1 Calibration Drift Assessment

The mid-range calibration standard was analyzed at the conclusion of testing and the results were compared to the initial analysis to determine if calibration drift has occurred. A 5% deviation between results is allowable. The SRI gas chromatograph has historically met the 5% criteria. The table below illustrates the results of the calibration drift assessments.

Table 3 Calibration Drift Assessment						
Lesni CatOx Performance Test						
Boston Scientific, Dorado, Puerto Rico						
June 13-14, 2019						
Date	Unit Tested	Detector	Concentration EtO Standard (ppm)	Initial Response (millivolts)	Final Response (millivolts)	Calibration Drift (%)
14-Jun	Lesni	FID	10	58.5	58.3	0.34%
14-Jun	Lesni Inlet	PID	100	248.0	249.5	0.60%

4.5.4.2 Direct Interface Sampling Train Recovery Study

Once the initial calibration standards were recorded the mid-range standard was introduced at the probe end of the sample train to compare results to the initial readings. A deviation of 10% is allowable. The sample trains have historically met the 10% criteria. The table below illustrates the results of the direct interface sample train recovery study.

Table 4 - Direct Interface Sample Train Recovery Study						
Lesni CatOx Performance Test						
Boston Scientific, Dorado, Puerto Rico						
June 13-14, 2019						
Date	Detector	Concentration EtO Standard (ppm)	Instrument Response			Recovery Efficiency (%)
			Cylinder Direct Inject (millivolts)	Direct Interface Sample Train Inject (millivolts)		
13-Jun	FID	10.00	58.55	54.55		7.33%
13-Jun	PID	1000	248.03	235.54		5.30%

ATTACHMENT A
EQUATIONS

Equation 1: Outlet ETO concentrations

$$W_o = (Q * \text{Mol.Wt.} * C) / (10^6 * \text{Mol.Vol.})$$

Where:

W _o	=	Mass of EtO released from abator to atmosphere
Q	=	Total volume of gas at the outlet of the abator (scf)
Mol.Wt.	=	Molecular Weight of ETO 44.05 (lb/lb-mol)
C	=	Concentration EtO in sample (ppmv)
Mol.Vol.	=	Molar volume: 385.32 scf/lb-mol at STP
10 ⁶	=	Conversation factor for parts per million

Equation 2: Mass Emission Rates

$$Q = T * (1 - B_{ws}) * V_s * A * ((T_{std} * P_s) / (T_s * P_{std}))$$

Where:

T	=	Duration of test in minutes
B _{ws}	=	Water vapor proportion by volume
V _s	=	Stack gas velocity in feet per second
A	=	Cross-sectional area of the stack in SQFT
T _{std}	=	528(°R) - standard temperature
P _s	=	Absolute stack Pressure ("Hg)
T _s	=	Stack Temperature (°R)
P _{std}	=	29.92" Hg - standard pressure

Equation 3: Destruction/Removal Efficiency

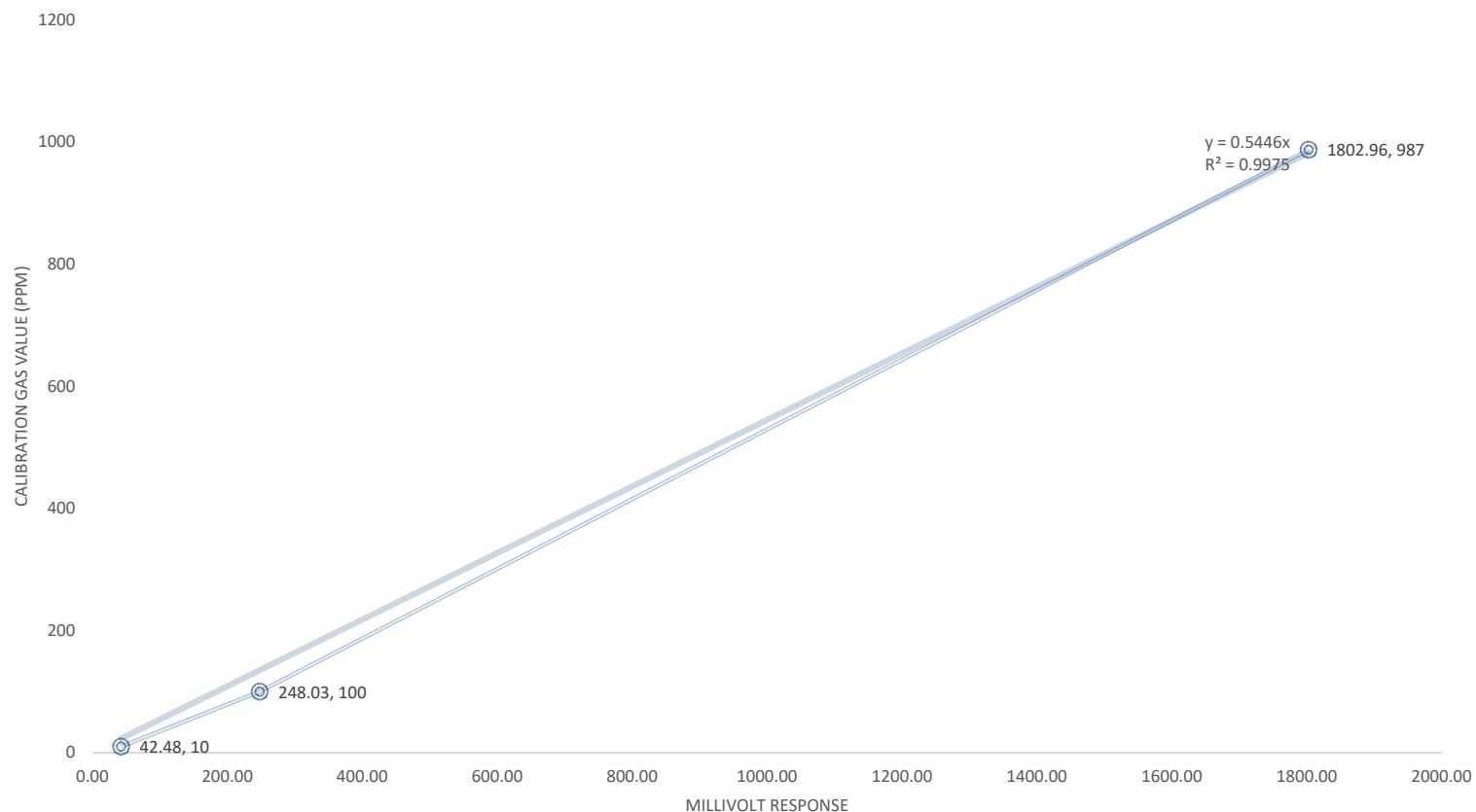
$$DRE = [(W_i - W_o)/W_i] * 100$$

Where:

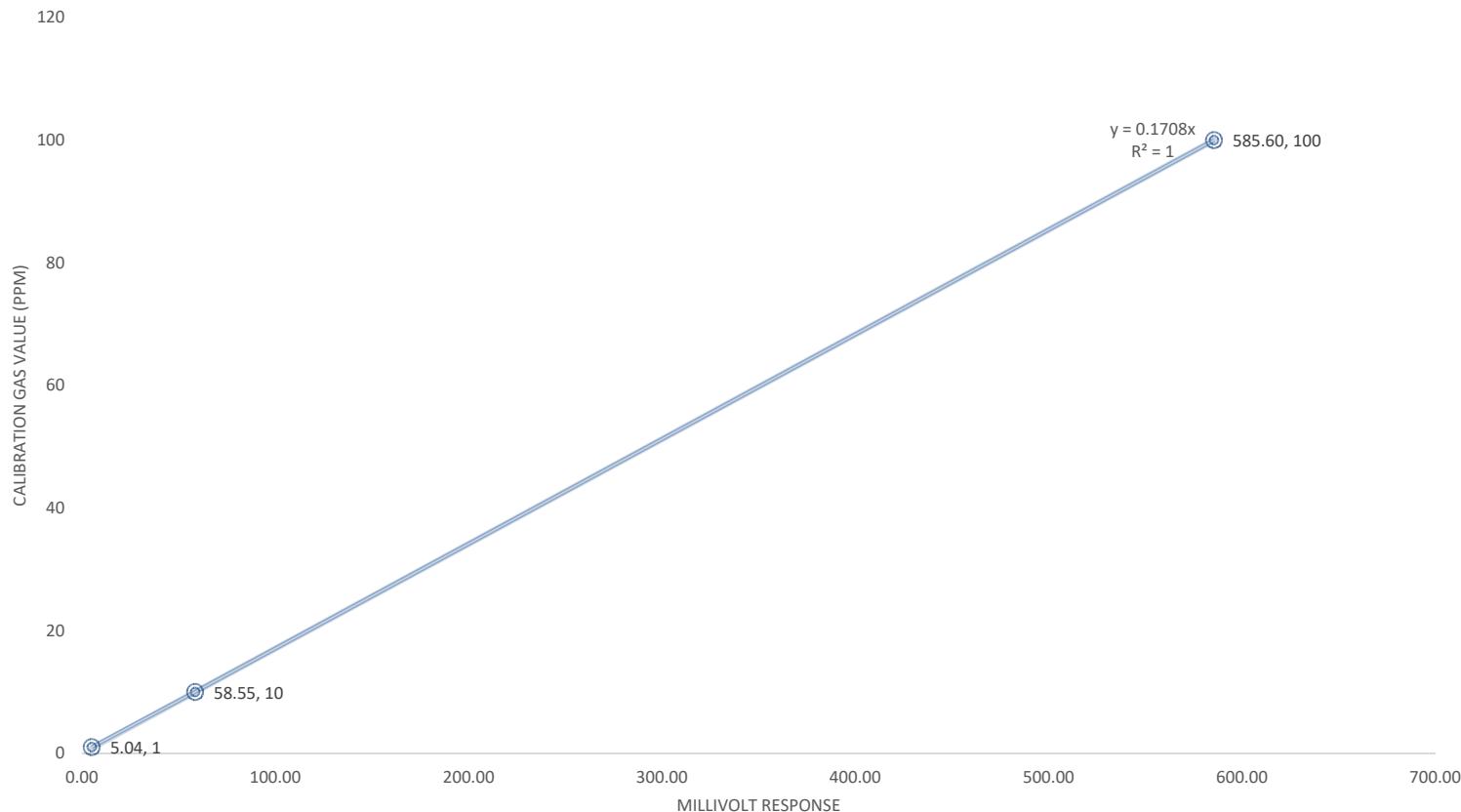
W _i	=	Mass of EtO at inlet of balance, Subpart O Calculation
W _o	=	Mass of EtO at outlet of the abator

ATTACHMENT B
CALIBRATION CURVES

Boston Scientific Dorado 2019 EPA Subpart O Air Quality Test Method 18 Calibration Curve - GC PID Lesni CatOx Inlet Testing



Boston Scientific Dorado 2017 EPA Subpart O Air Quality Test
Method 18 Calibration Curve - GC FID Lesni CatOx Inlet Testing



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ATTACHMENT C
CHROMATOGRAM LOGSHEET

06/13/19	77		0.653	292.5	1:53:00 PM		159.3
	78		0.643	300.8			163.8
	79		0.643	289.4			157.6
	80		0.653	289.5			157.7
	81		0.653	288.6			157.2
	82		0.650	286.8			156.2
	83		0.646	447.1			243.5
	84		0.633	861.4			469.1
	85		0.640	1127.5			614.0
	86		0.640	1374.8			748.7
	87		0.640	1511.0			822.9
	88		0.640	1620.2			882.4
	89		0.640	1827.3			995.2
	90		0.640	2185.1			1190.0
	91		0.640	2461.3			1340.4
	92		0.640	2604.9			1418.6
	93		0.630	2670.7			1454.5
	94		0.633	2702.1			1471.5
	95		0.640	2837.5			1545.3
	96		0.630	3423.6			1864.5
	97		0.630	4056.3			2209.1
	98		0.636	4397.1			2394.7
	99		0.636	4539.4			2472.1
	100		0.636	4625.6			2519.1
	101		0.636	4532.7			2468.5
	102		0.640	3846.1			2094.6
	103		0.630	3316.5			1806.2
	104		0.640	3493.2	3:05:00 PM		1902.4
count	28		average	2221.7		ppm	1210.0
06/14/19	346		0.630	499.2	1:31:00 AM		271.9
	347		0.646	494.8			269.5
	348		0.640	500.2			272.4
	349		0.643	493.9			269.0
	350		0.643	700.0			381.2
	351		0.650	1506.4			820.4
	352		0.640	1986.9			1082.1
	353		0.640	2433.0			1325.0
	354		0.636	2676.3			1457.5
	355		0.636	2636.3			1435.7
	356		0.626	2801.5			1525.7
	357		0.626	3331.8			1814.5
	358		0.623	3923.6			2136.8
	359		0.630	4284.5			2333.3
	360		0.636	4443.4			2419.9
	361		0.630	4482.0			2440.9

Lesni CatOx Inlet Run 1

Lesni CatOx Inlet Run 2

	362		0.640	4546.3			2475.9
	363		0.630	4755.2			2589.7
	364		0.633	4909.1			2673.5
	365		0.633	4989.0			2717.0
	366		0.636	5005.9			2726.2
	367		0.640	5009.6			2728.2
	368		0.636	4981.7	2:31:00 AM		2713.1
count	23		average	3103.9		ppm	1690.4

06/14/19	612	Lesni CatOx Inlet Run ³	0.630	643.1	1:06:00 PM		350.2
	613		0.630	641.4			349.3
	614		0.633	645.4			351.5
	615		0.640	642.4			349.9
	616		0.623	639.8			348.5
	617		0.626	909.6			495.4
	618		0.633	1645.2			896.0
	619		0.633	2084.2			1135.1
	620		0.623	2508.1			1365.9
	621		0.616	2657.9			1447.5
	622		0.622	2728.7			1486.1
	623		0.620	2994.1			1630.6
	624		0.630	3627.2			1975.3
	625		0.620	4200.6			2287.6
	626		0.636	4525.8			2464.8
	627		0.620	4686.9			2552.5
	628		0.630	4716.4			2568.6
	629		0.620	4846.8			2639.6
	630		0.620	5147.4			2803.3
	631		0.623	5322.9			2898.9
	632		0.623	5395.6			2938.5
	633		0.620	5441.9			2963.7
	634		0.620	5338.6	2:06:00 PM		2907.4
count	23		average	3130.0		ppm	1704.6

Boston Scientific Dorado 2019 EPA Subpart O Air Quality Test Method 18 Chromatogram Log Sheet								
Lesni Cat Ox Outlet sampling by GC FID								
Date	fp	type	description	retention time	response	average	score	calc'd conc
06/13/19	17	cal	100ppm Calibration Gas	0.946	588.7	585.60	1.01	
06/13/19	18			0.946	586.0		1.00	
06/13/19	19			0.946	582.0		0.99	100.02
06/13/19	30	cal	10ppm Calibration Gas	0.943	58.6	58.55	1.00	
06/13/19	31			0.943	58.4		1.00	
06/13/19	32			0.953	58.7		1.00	10.00
06/13/19	37	cal	1ppm Calibration Gas	0.950	5.0	5.04	0.99	
06/13/19	38			0.940	5.1		1.02	
06/13/19	39			0.943	5.0		0.99	0.860
06/13/19	45	cal	10ppm Direct Interface Recovery Study	0.946	54.5	54.55	1.00	
06/13/19	47			0.946	54.6		1.00	
06/13/19	48			0.946	54.6		1.00	9.317
06/14/19	643	cal	10ppm Calibration Drift Test	0.936	58.4	58.35	1.00	
	644			0.943	58.1		1.00	
	645			0.943	58.5		1.00	10.0
						#DIV/0!	#DIV/0!	#DIV/0!
06/13/19			Lesni CatOx Outlet Run 1					
					ND - there is no presence of ethylene oxide in the outlet of the abatement system above the 1ppm detection limit			

count	0		average	0.0		ppm	1.0
06/14/19	159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178	Lesni CatOx Outlet Run 2		ND - there is no presence of ethylene oxide in the outlet of the abatement system above the 1ppm detection limit			

count	20		average	#DIV/0!		ppm	1.0
06/14/19	612 613 614 615 616 617 618 619						

	620 621 622 623 624 625 626 627 628 629 630 631 632 633 634	<i>Lesni CatOx Outlet Run 3</i>	ND - there is no presence of ethylene oxide in the outlet of the abatement system above the 1ppm detection limit
count	23	average #DIV/0!	ppm 1.0

ATTACHMENT D
CHROMATOGRAMS

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 10:57:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_01.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 10:57:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

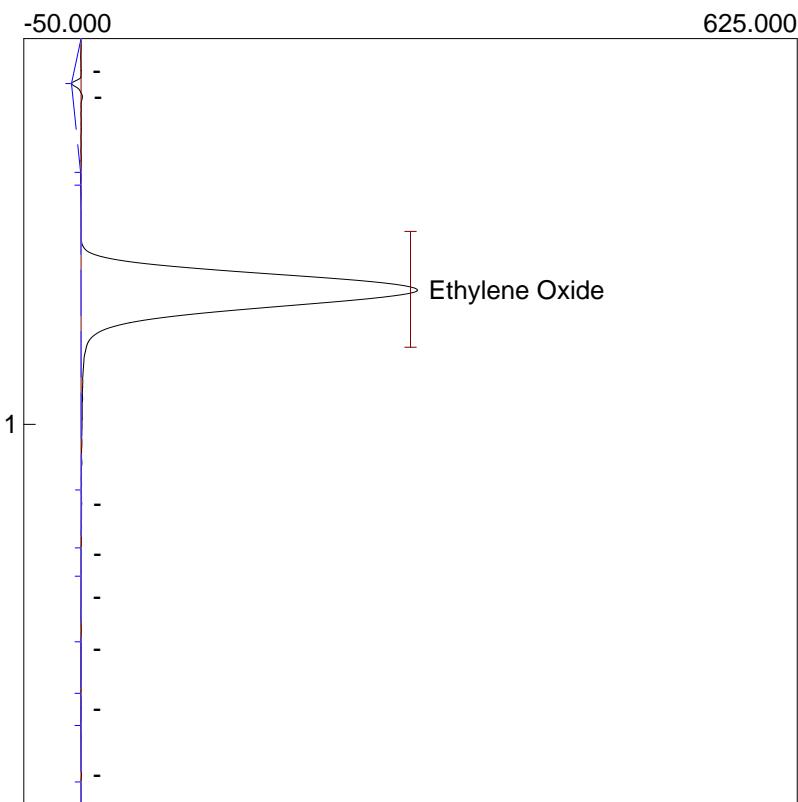
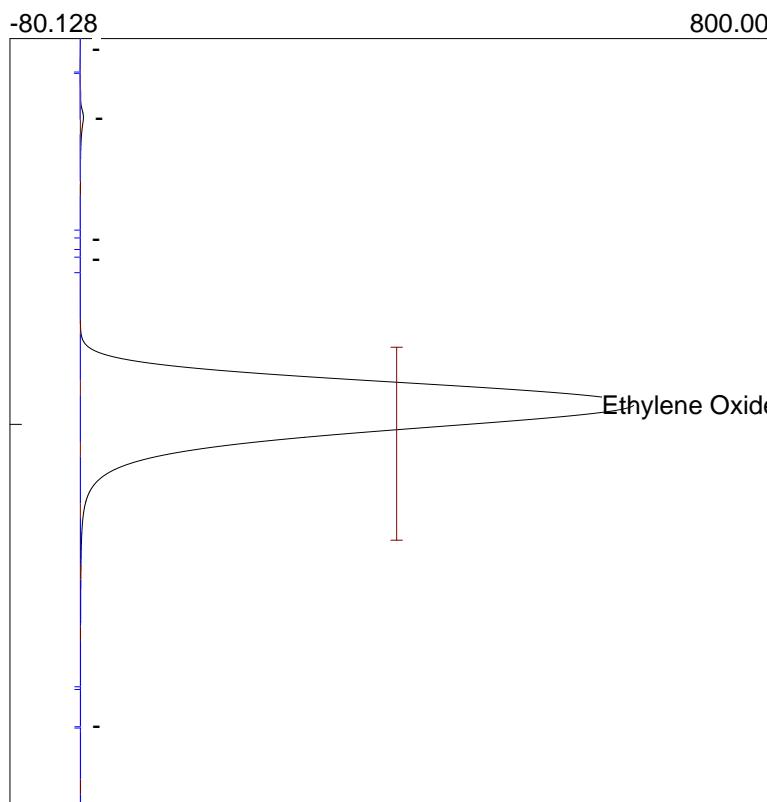
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_01.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 1ppm calibration gas



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	5666.2720
1			5666.2720

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	1807.5260
1			1807.5260

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:00:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

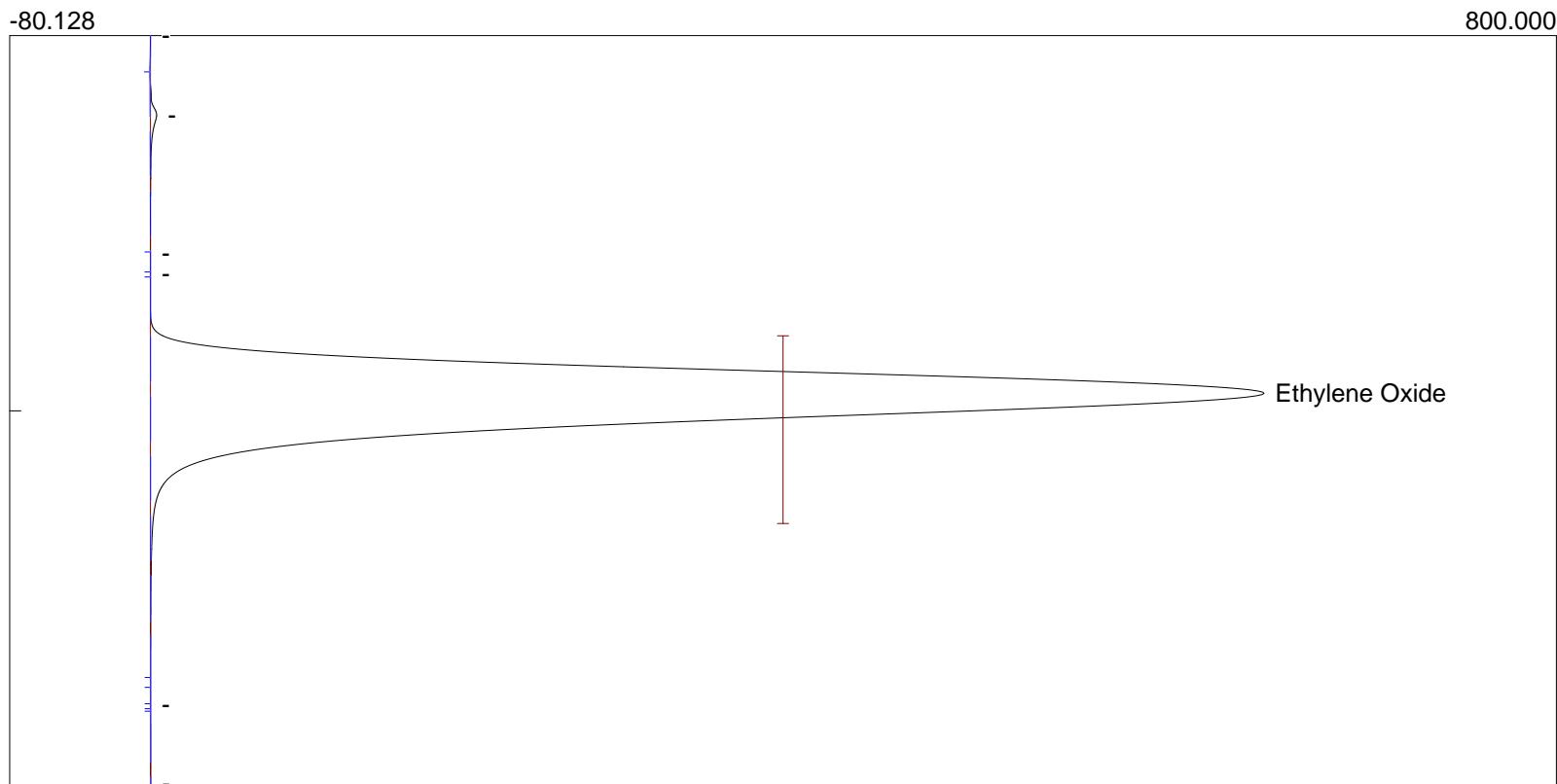
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_02.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	5682.0346
1			5682.0346

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:03:35

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_03.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:03:35

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

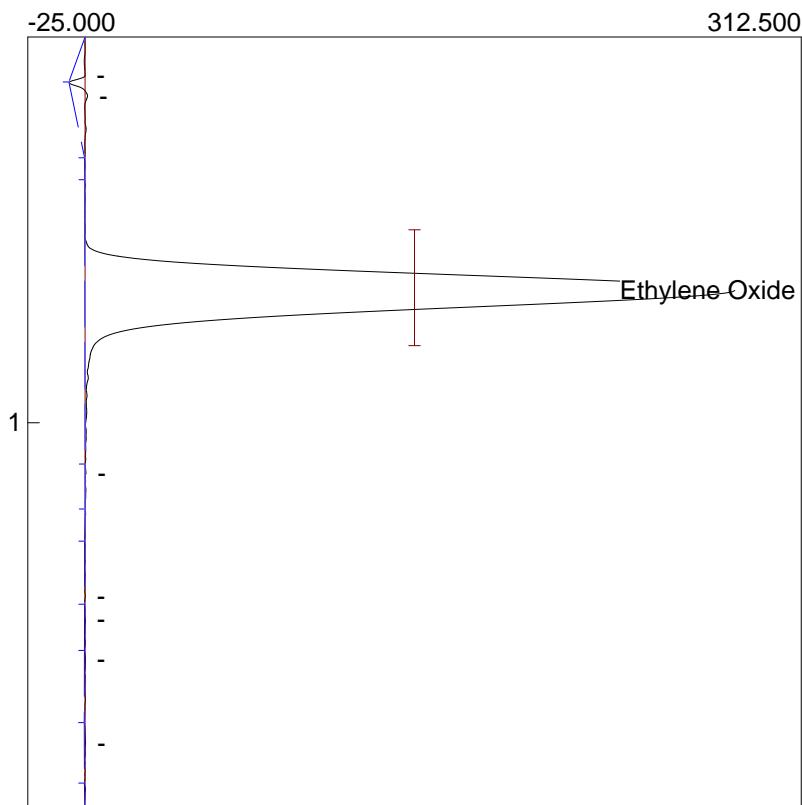
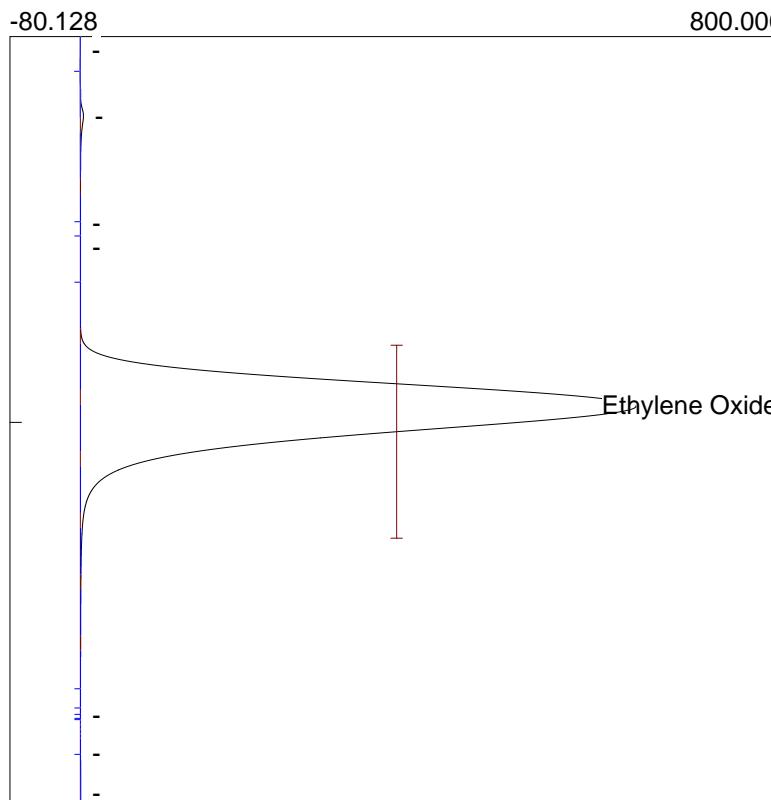
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_03.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.956	5720.8088
1			5720.8088

Number	Component	Retention	Area
1	Ethylene Oxide	0.656	1731.1420
1			1731.1420

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:05:41

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_04.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:05:41

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

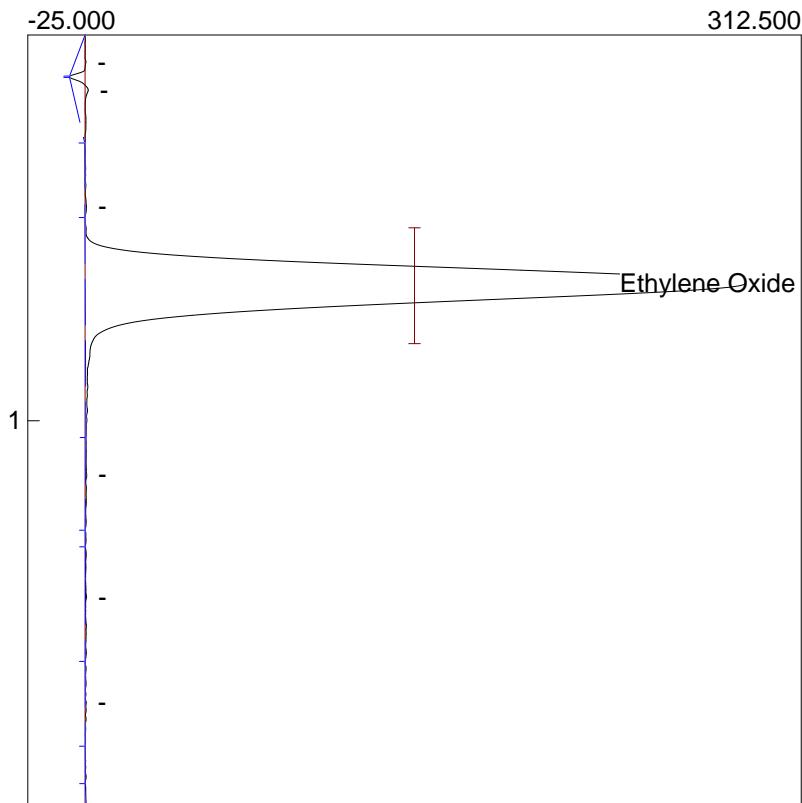
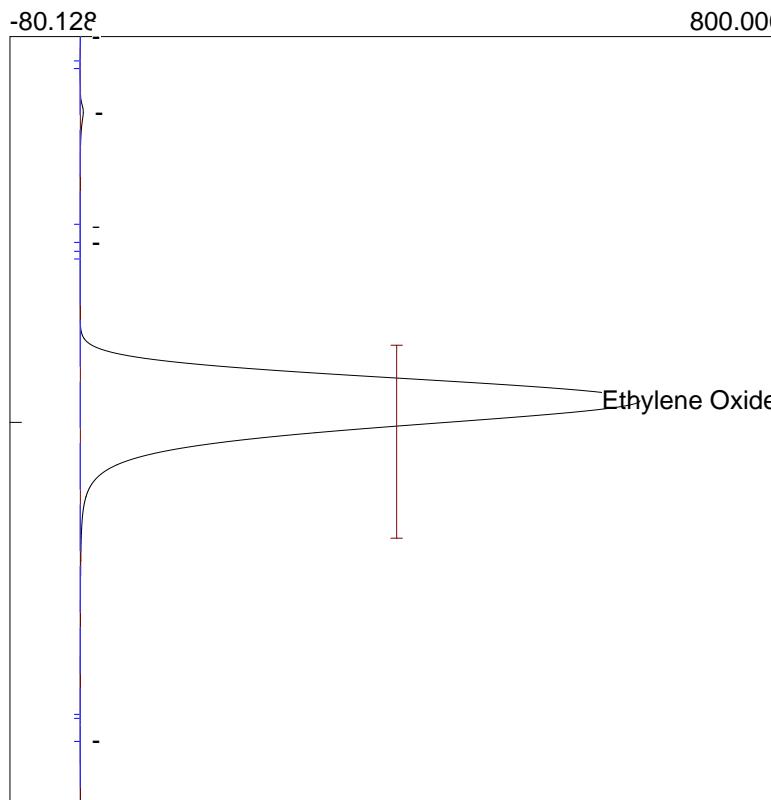
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_04.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	5748.3868
1			5748.3868

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	1753.5186
1			1753.5186

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:07:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_05.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:07:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

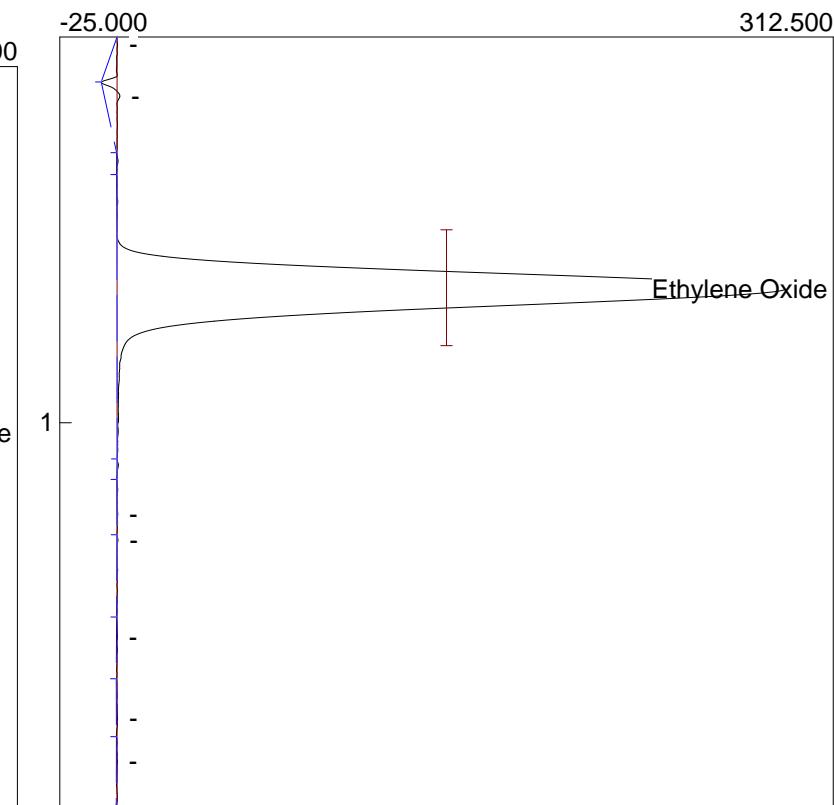
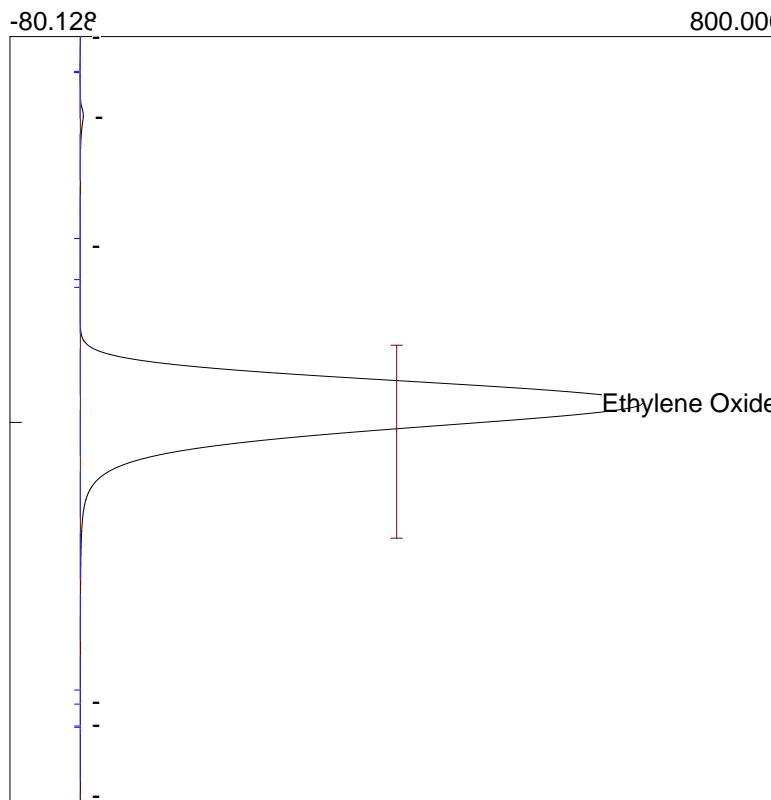
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_05.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	5761.3572
1			5761.3572

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	1762.5949
1			1762.5949

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:09:53

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_06.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:09:53

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

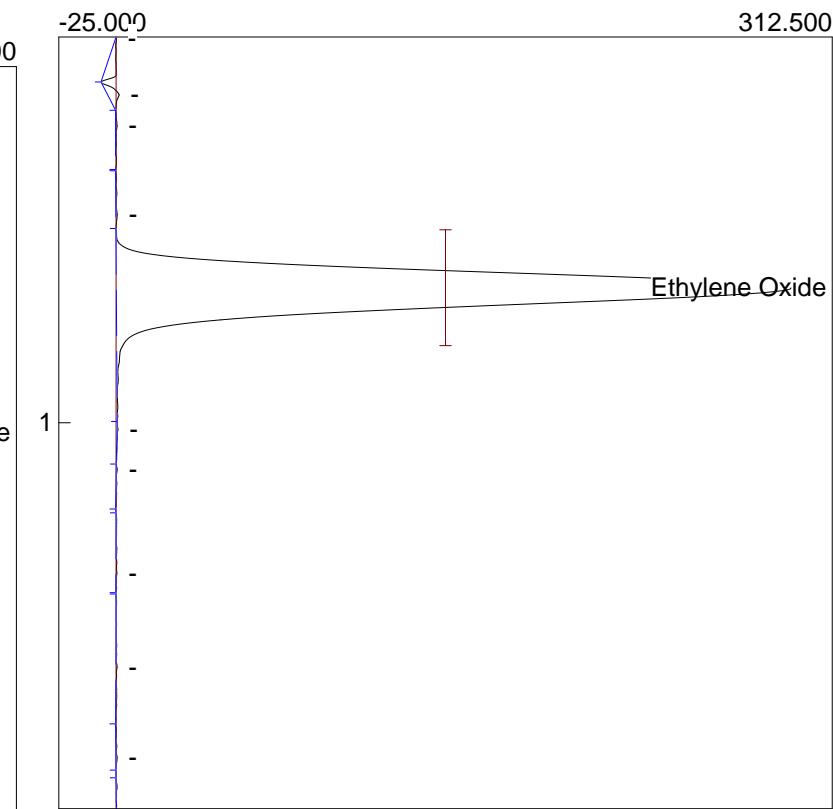
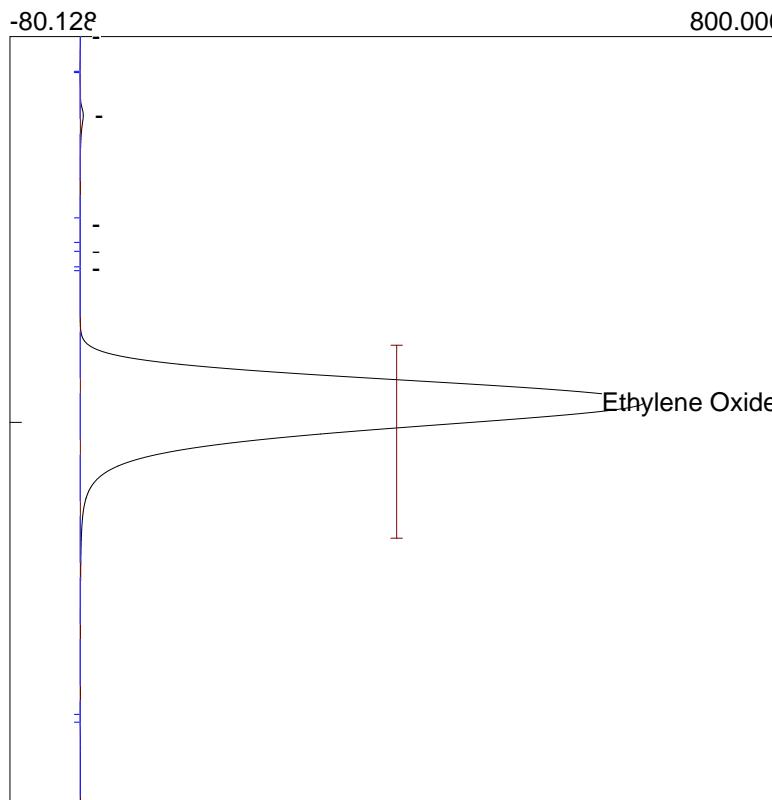
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_06.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	5772.2998
1			5772.2998

Number	Component	Retention	Area
1	Ethylene Oxide	0.650	1770.1346
1			1770.1346

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:11:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_07.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:11:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

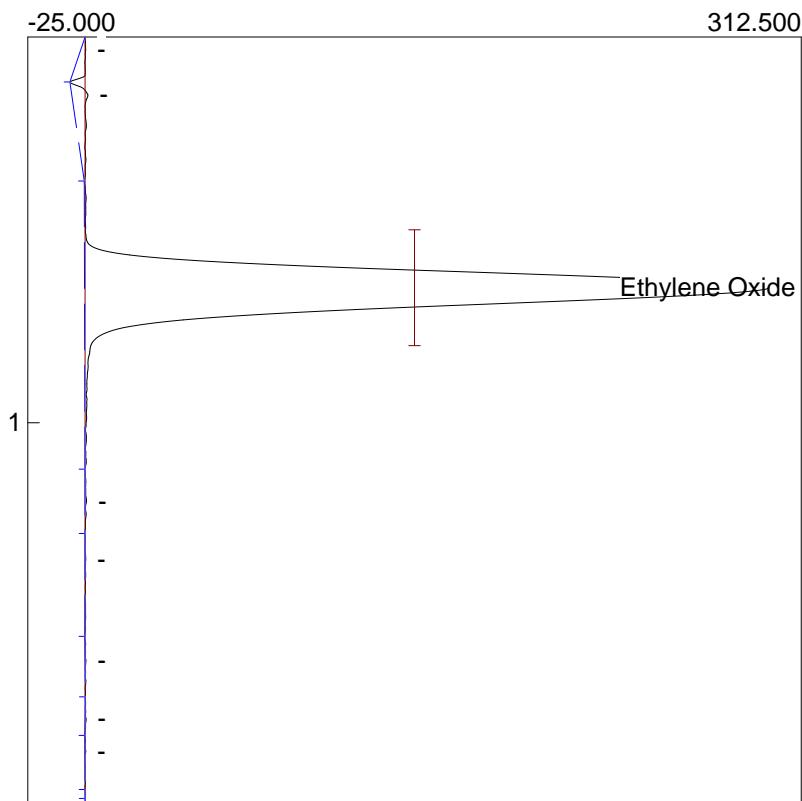
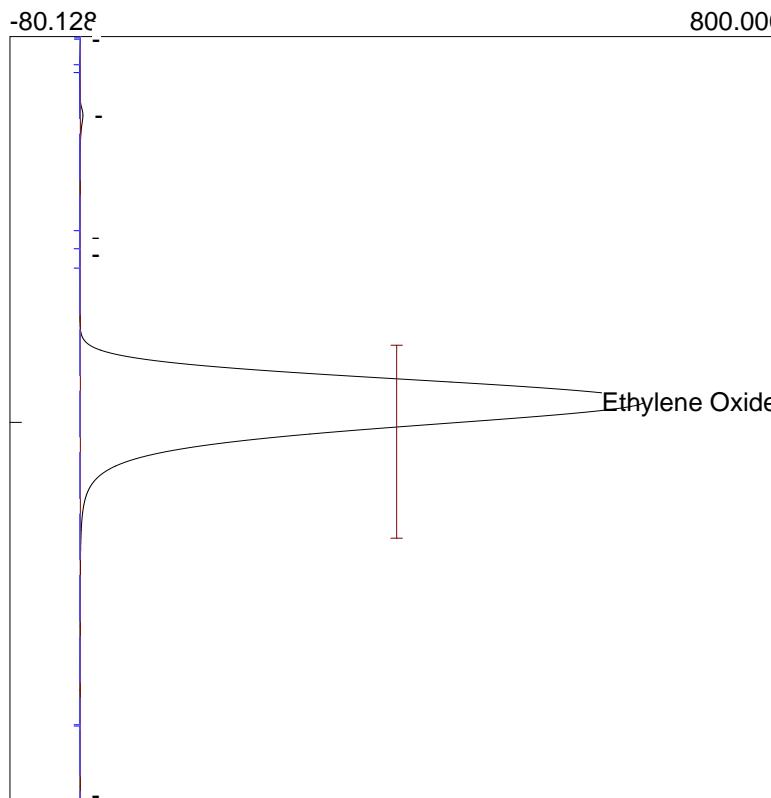
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_07.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	5776.5153
1			5776.5153

Number	Component	Retention	Area
1	Ethylene Oxide	0.650	1803.9672
1			1803.9672

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:14:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_08.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:14:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

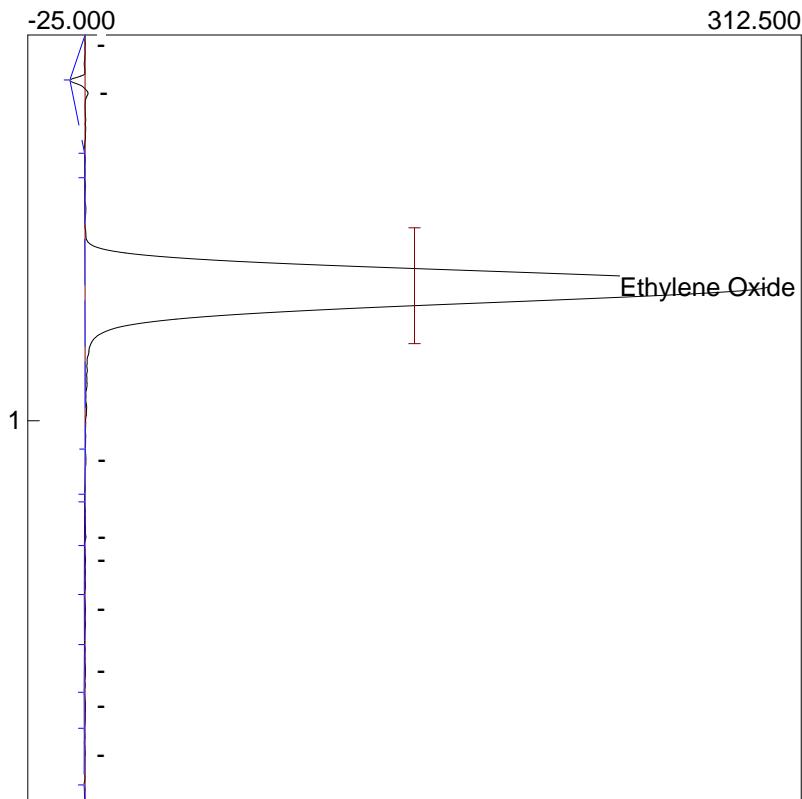
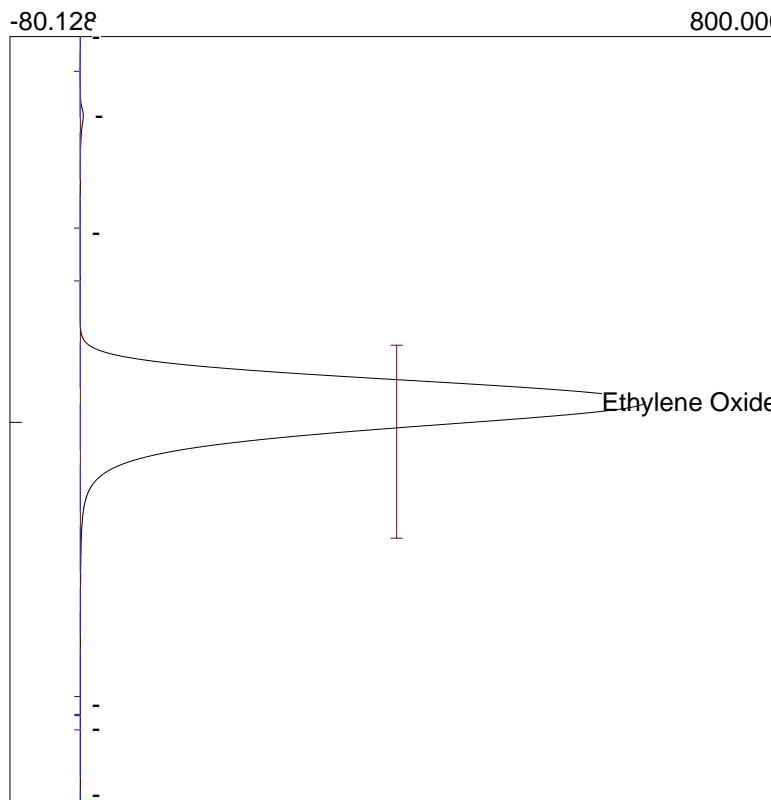
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_08.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	5777.3653
1			5777.3653

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	1796.2705
1			1796.2705

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:16:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_09.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:16:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

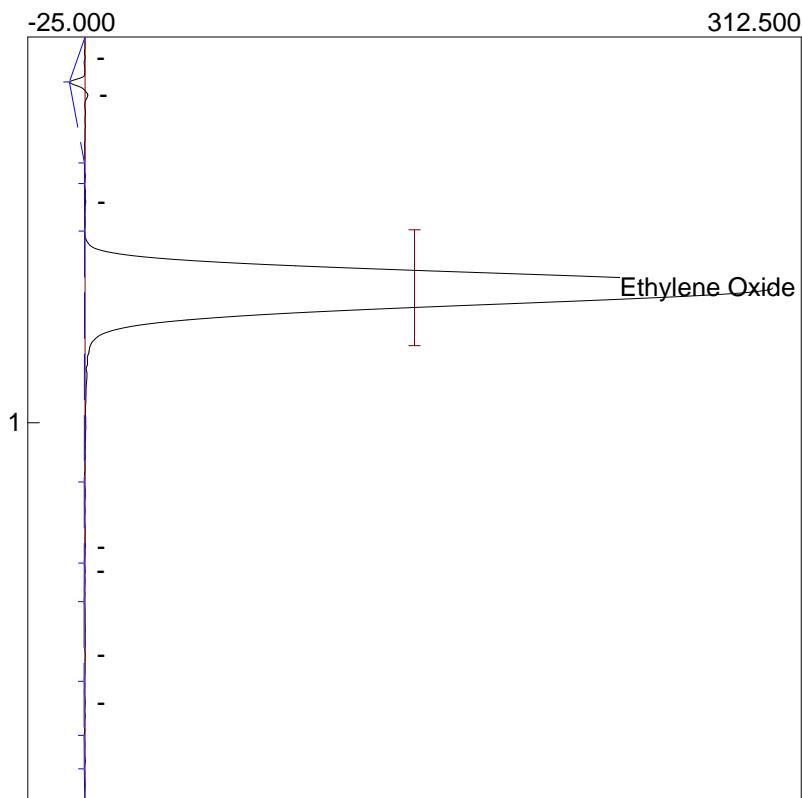
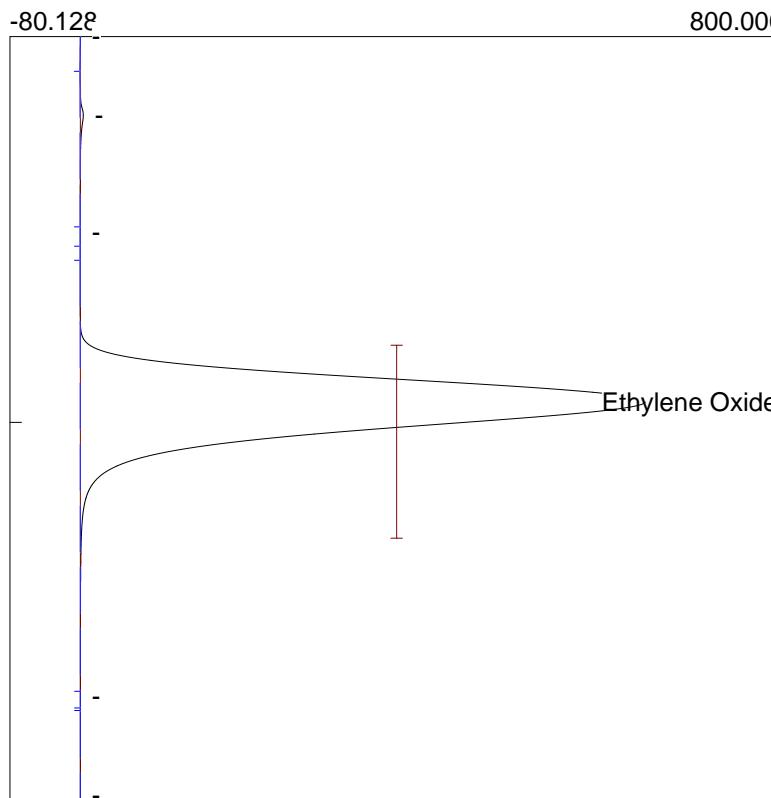
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_09.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	5777.3479
1			5777.3479

Number	Component	Retention	Area
1	Ethylene Oxide	0.650	1808.6455
1			1808.6455

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:18:17

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_10.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 987ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:18:17

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

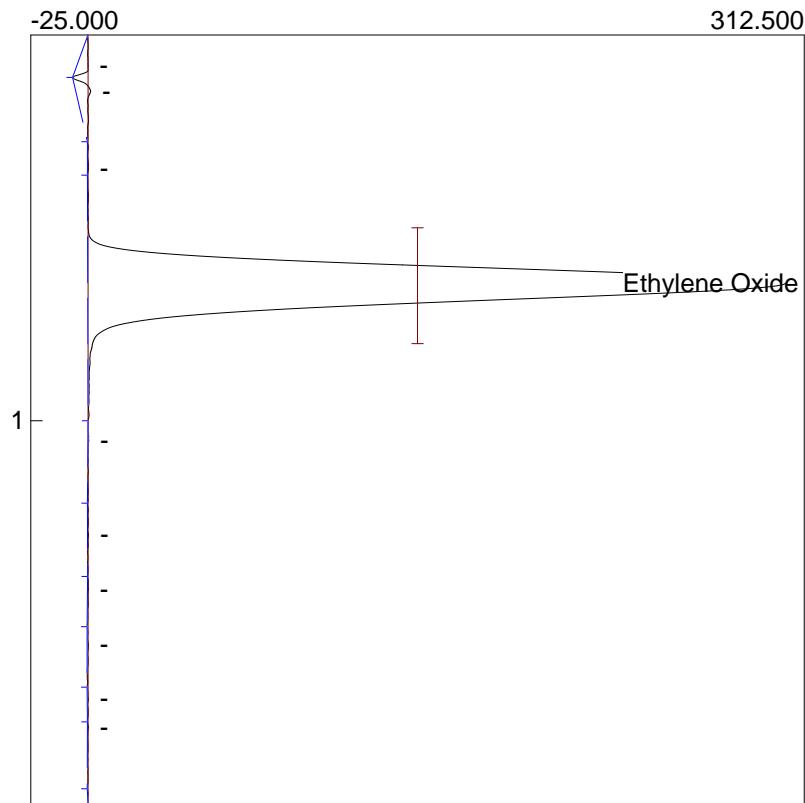
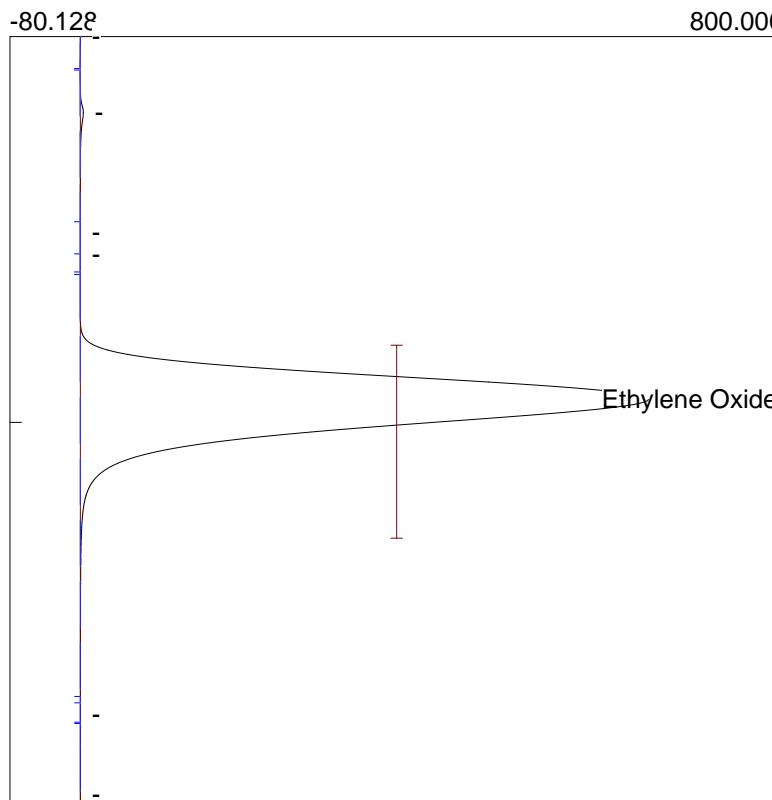
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_10.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.940	5811.0672
1			5811.0672

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	1829.7683
1			1829.7683

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:21:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_11.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:21:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

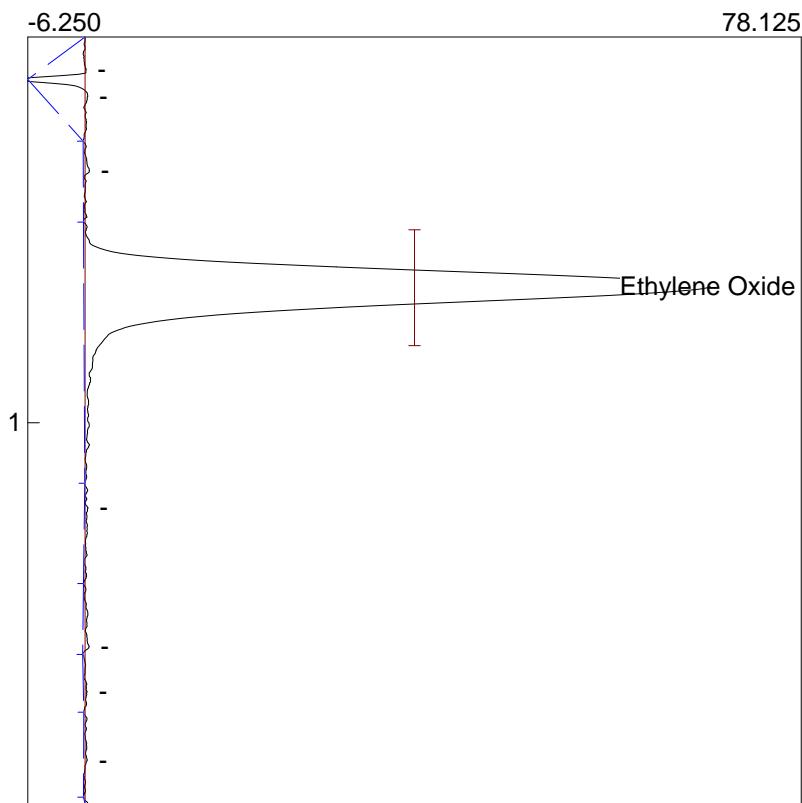
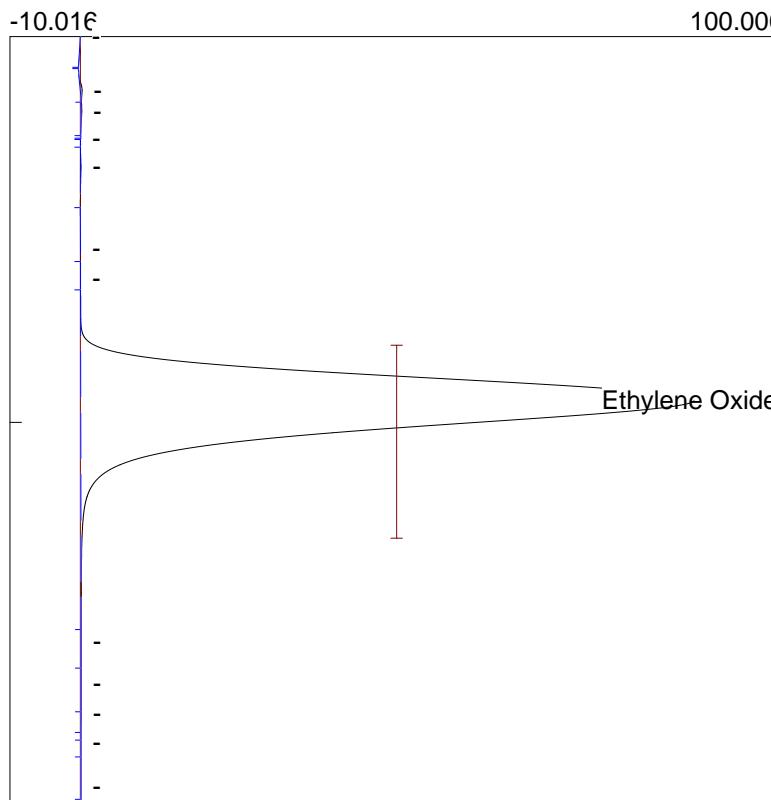
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_11.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	785.1674
1			785.1674

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	420.1066
1			420.1066

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:23:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_12.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:23:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

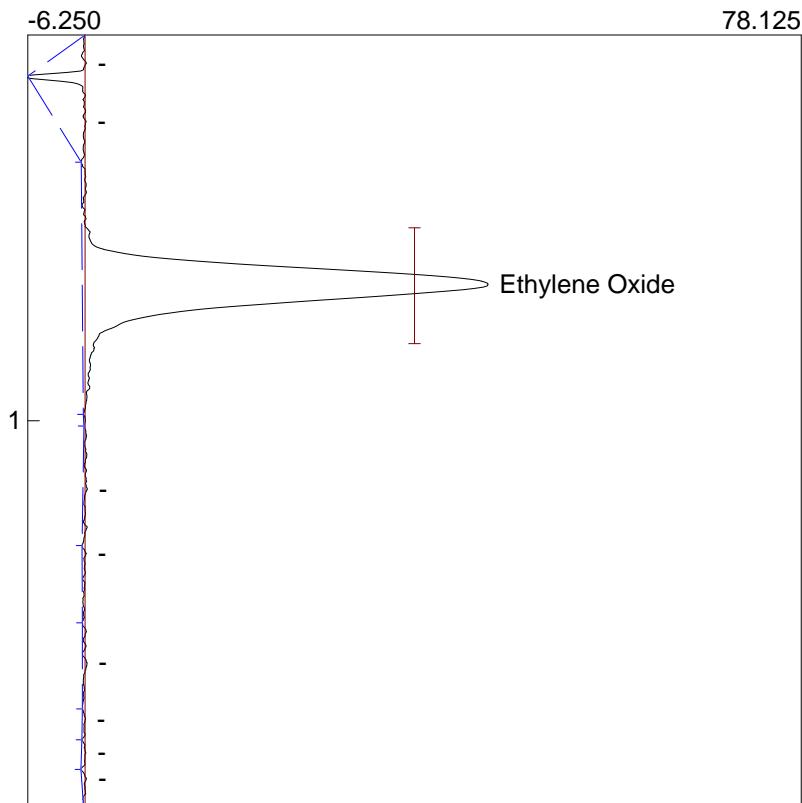
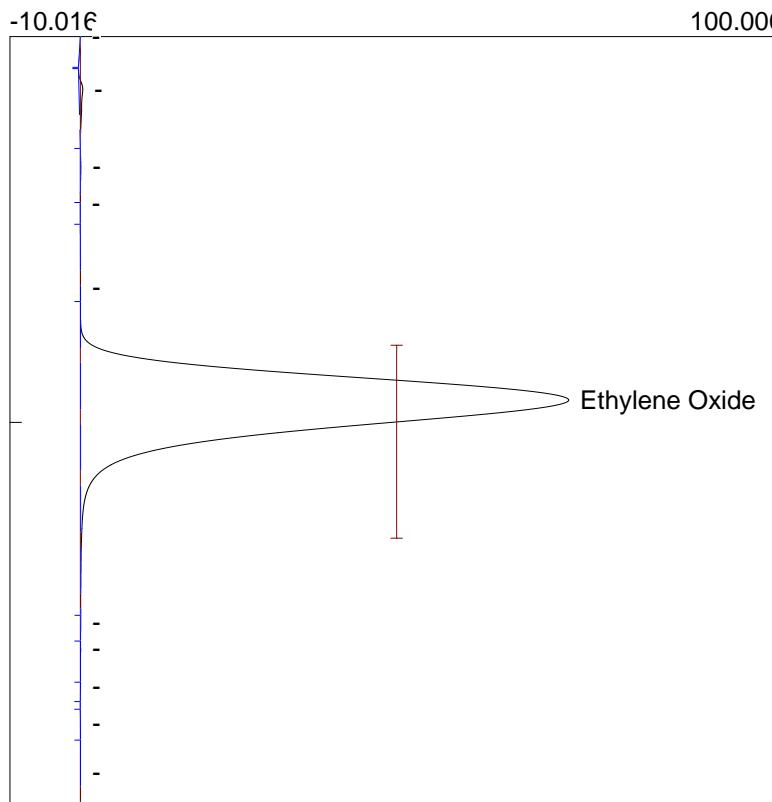
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_12.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	625.5204
1			625.5204

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	282.4942
1			282.4942

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:26:09

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_13.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:26:09

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

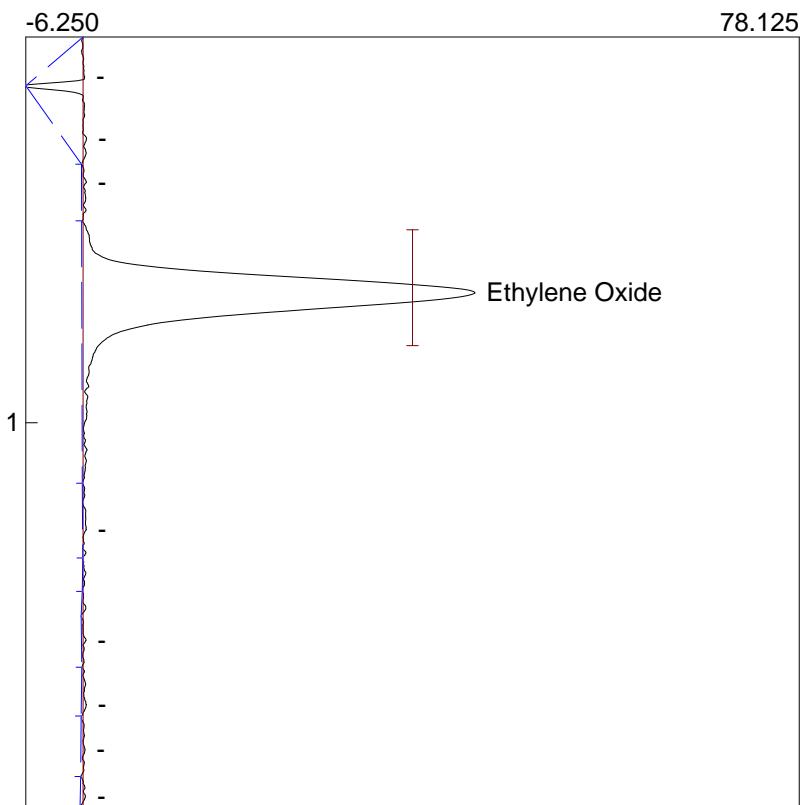
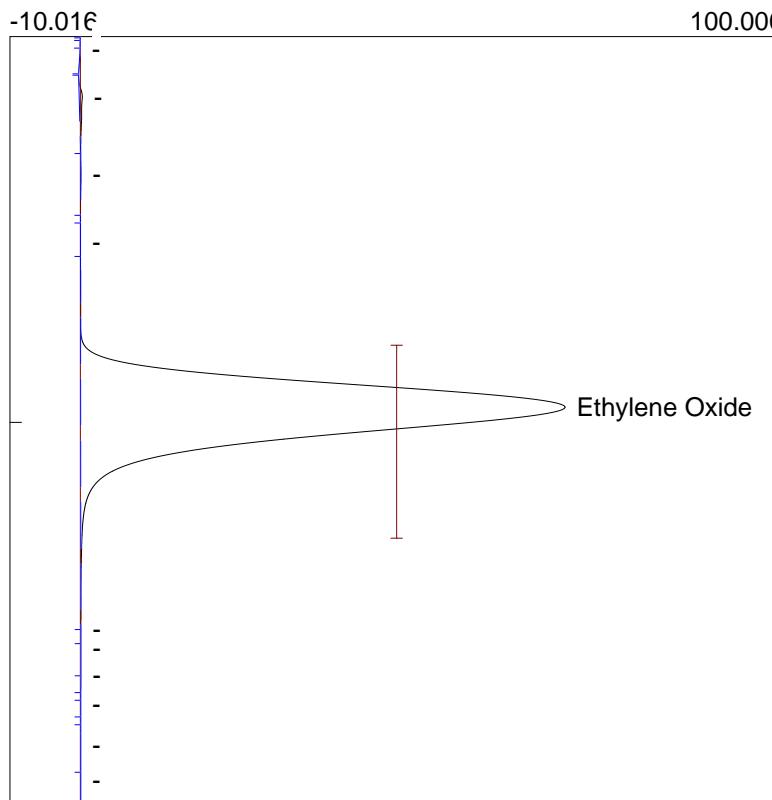
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_13.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.960	620.6252
1			620.6252

Number	Component	Retention	Area
1	Ethylene Oxide	0.663	273.6238
1			273.6238

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:28:18

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_14.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:28:18

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

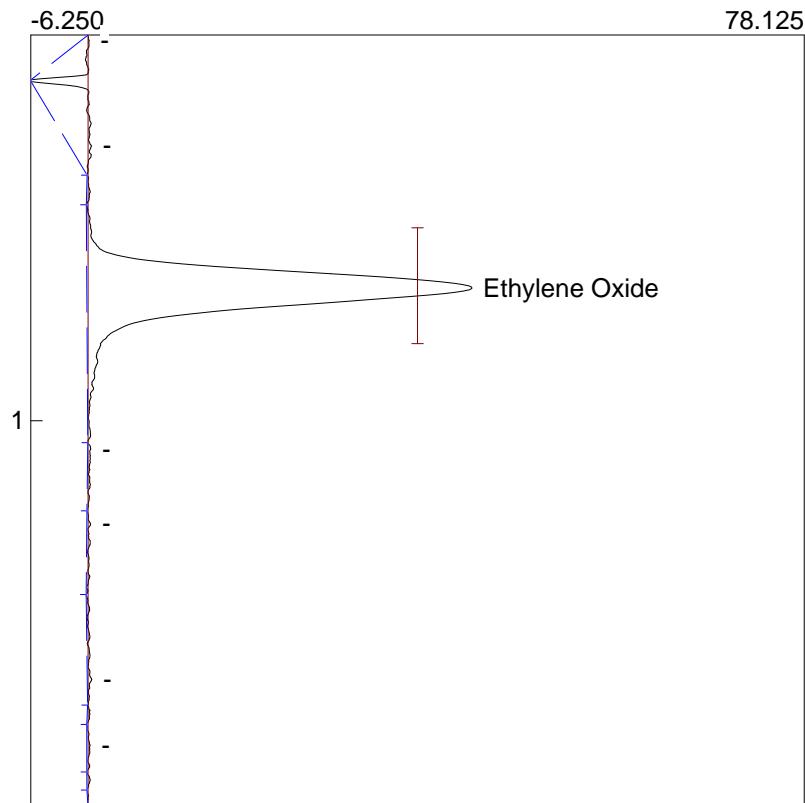
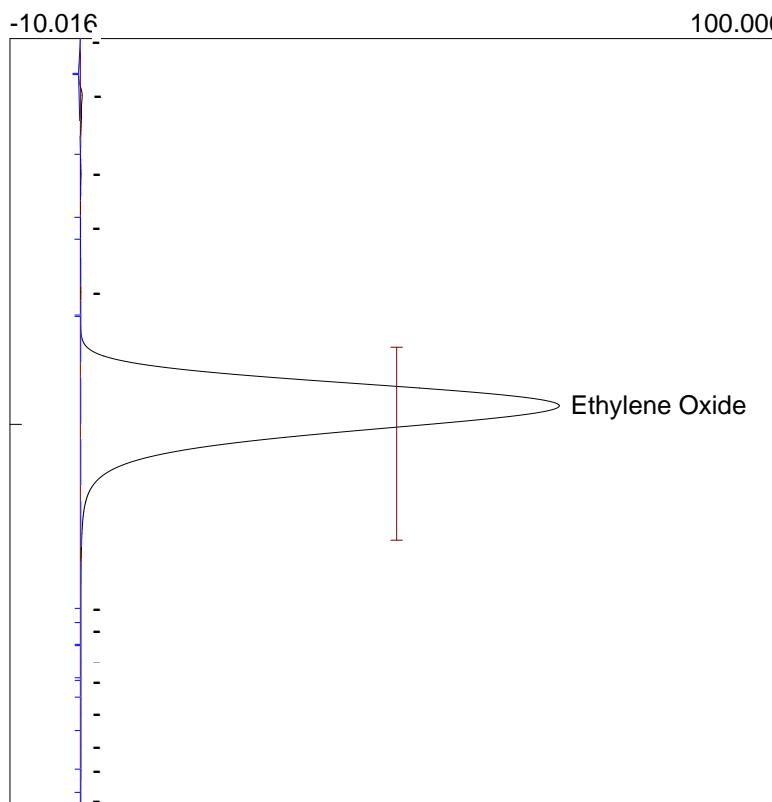
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_14.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	612.6387
1			612.6387

Number	Component	Retention	Area
1	Ethylene Oxide	0.656	265.3401
1			265.3401

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:30:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_15.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:30:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

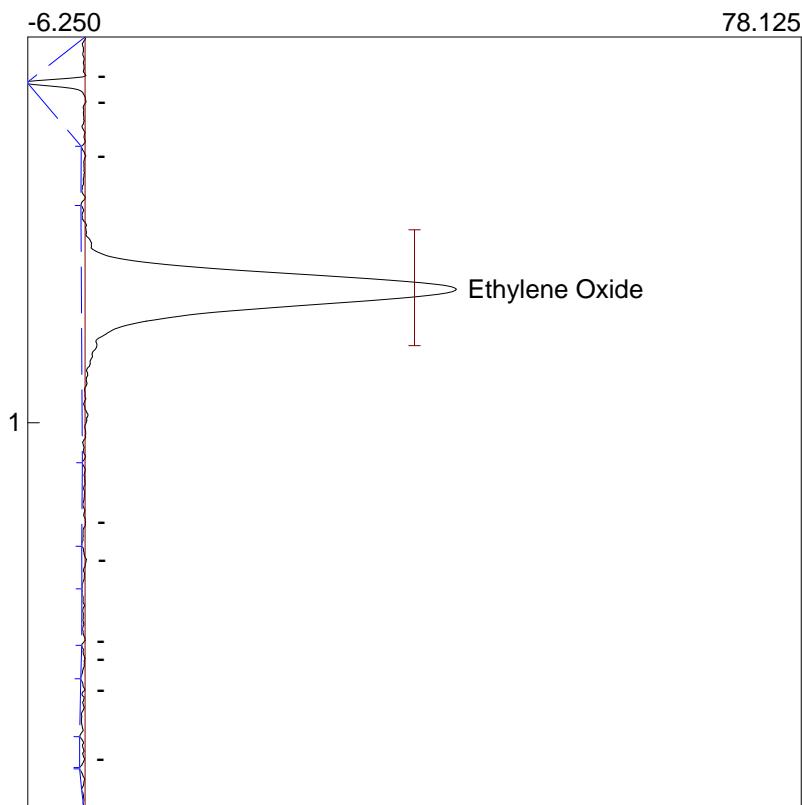
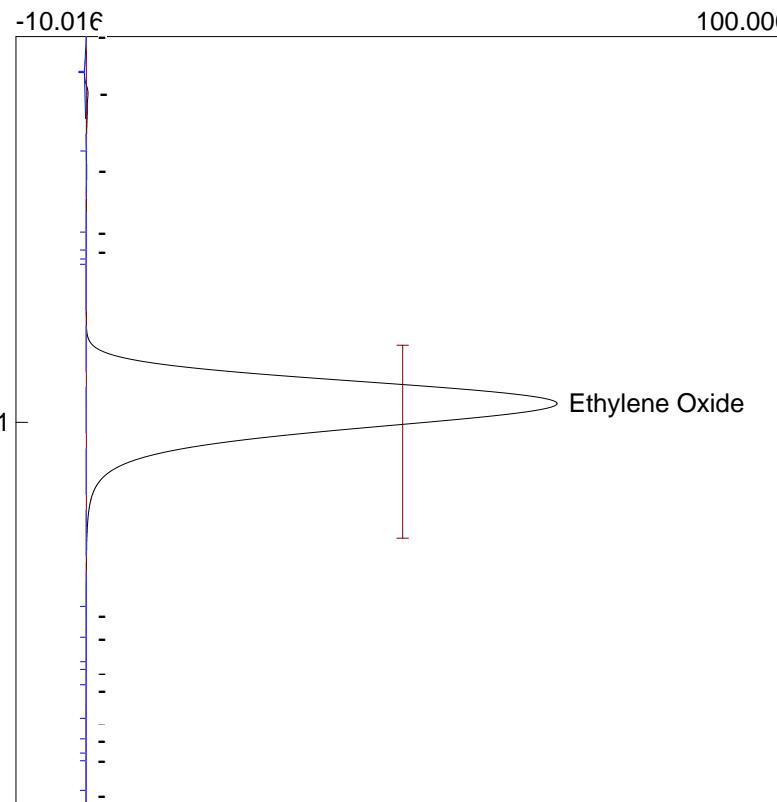
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_15.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	602.7170
1			602.7170

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	261.6862
1			261.6862

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:32:33

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_16.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:32:33

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

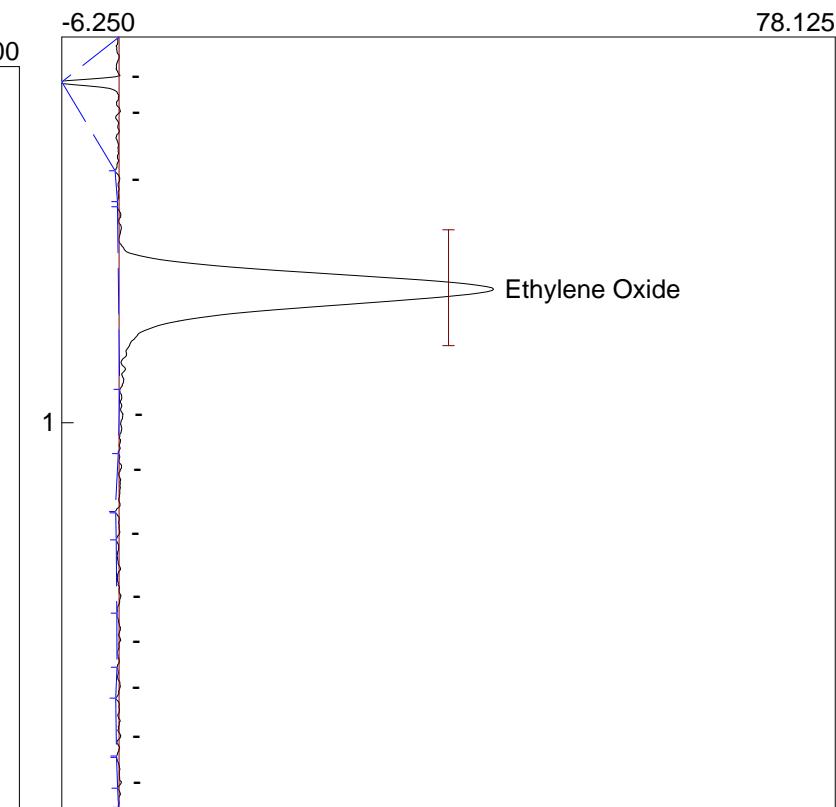
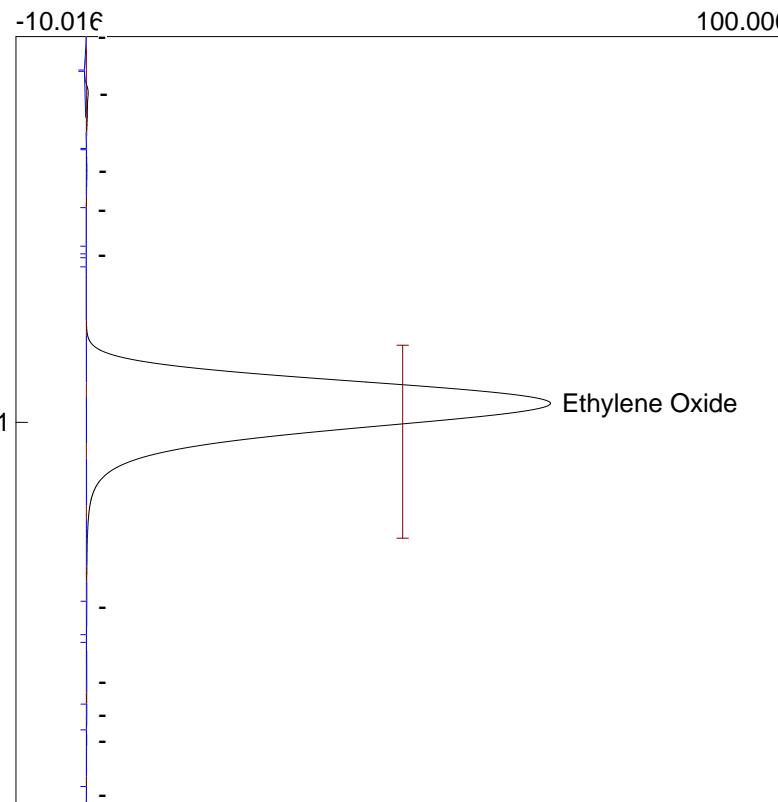
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_16.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	594.2136
1			594.2136

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	247.1114
1			247.1114

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:34:39

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_17.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:34:39

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

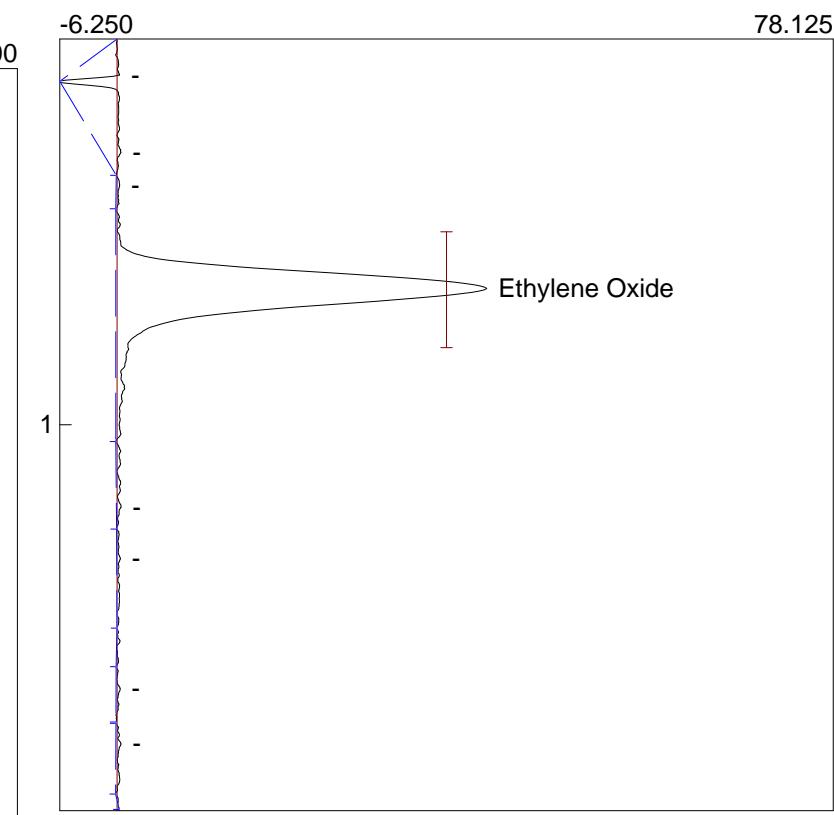
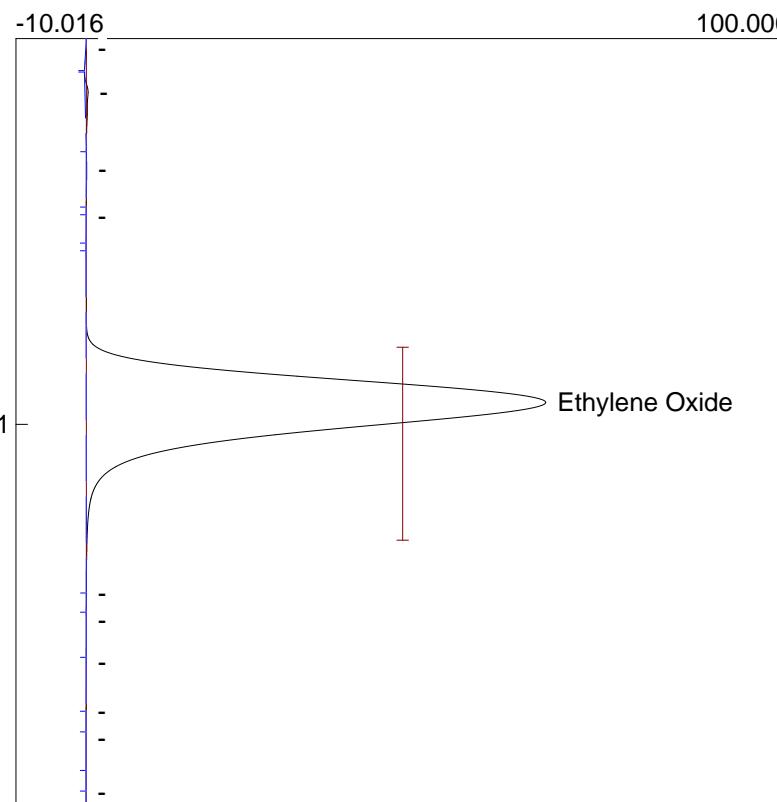
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_17.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	588.7128
1			588.7128

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	256.8717
1			256.8717

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:36:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_18.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:36:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

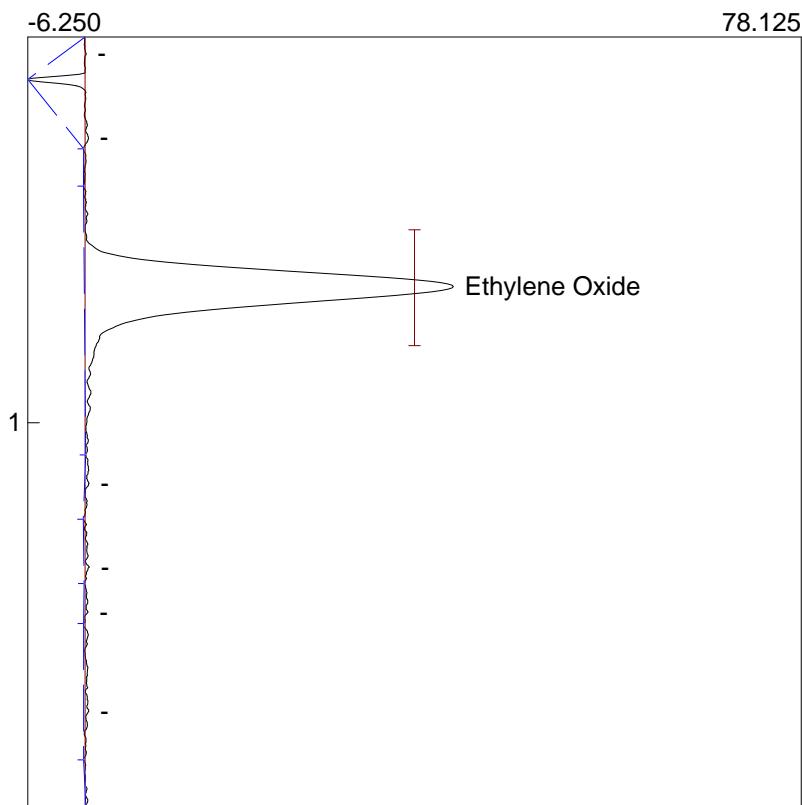
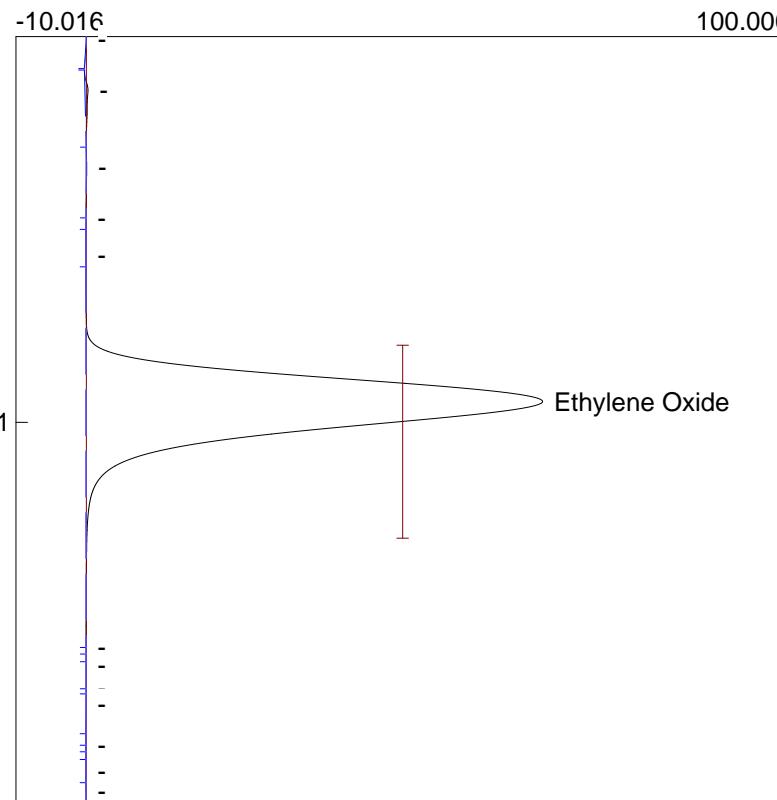
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_18.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	586.0470
1			586.0470

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	250.2726
1			250.2726

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:38:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_19.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 100ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:38:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

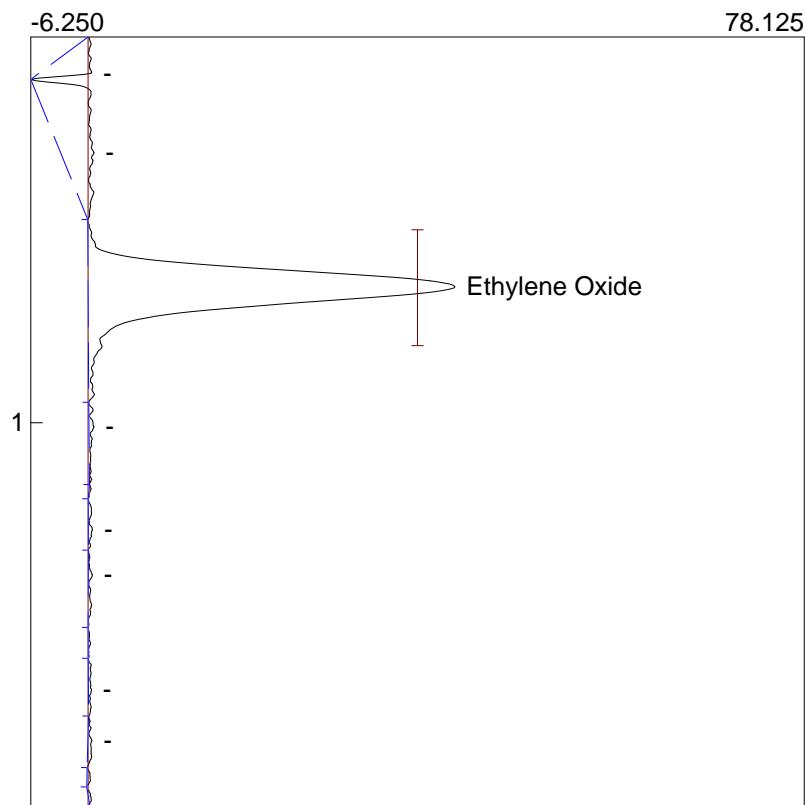
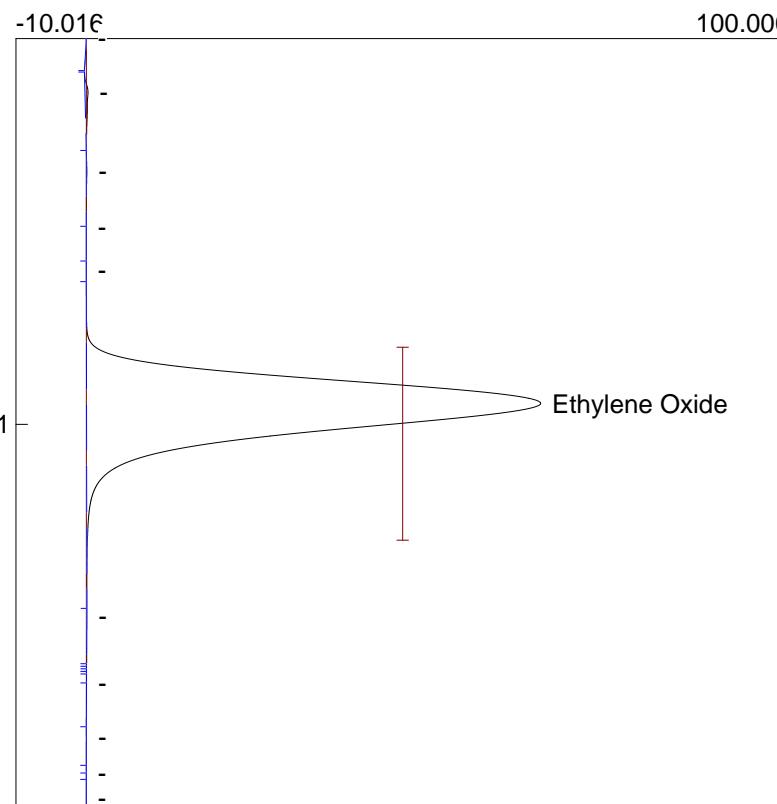
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_19.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	582.0372
1			582.0372

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	246.7022
1			246.7022

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:42:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_20.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:42:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

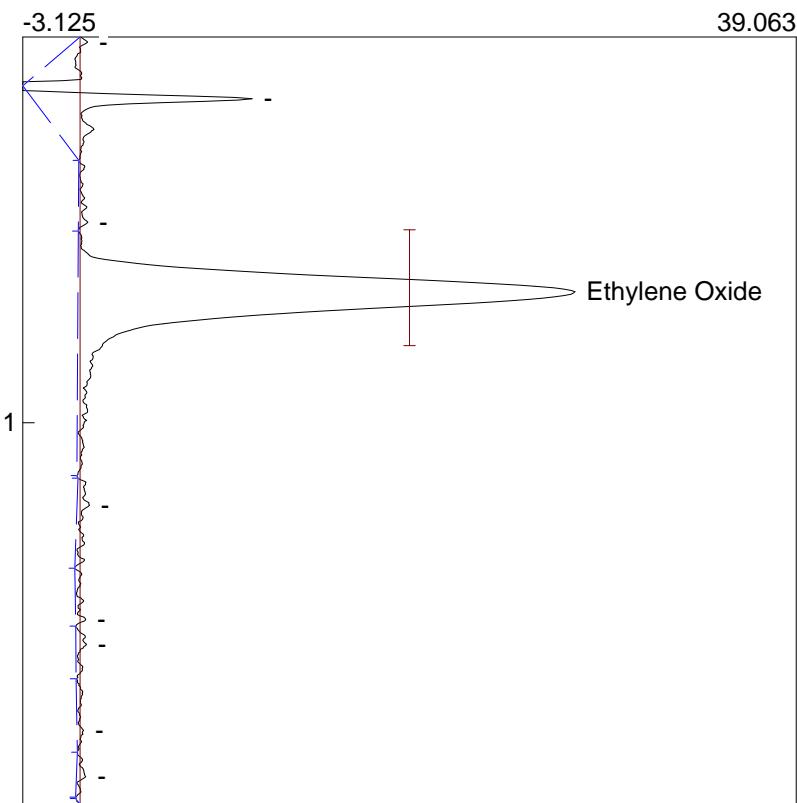
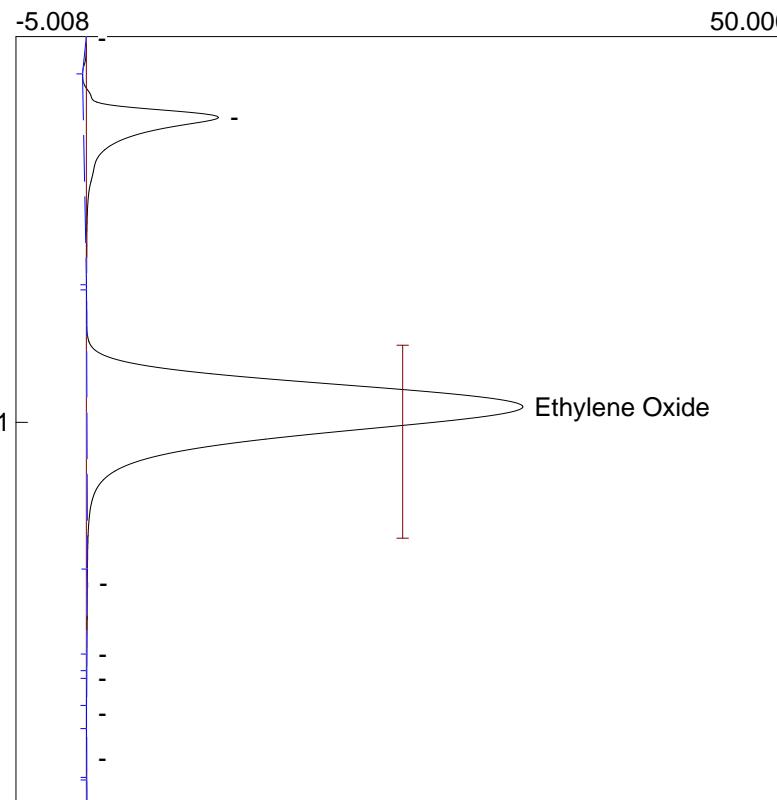
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_20.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.960	279.1141
1			279.1141

Number	Component	Retention	Area
1	Ethylene Oxide	0.660	172.4454
1			172.4454

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:44:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_21.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:44:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

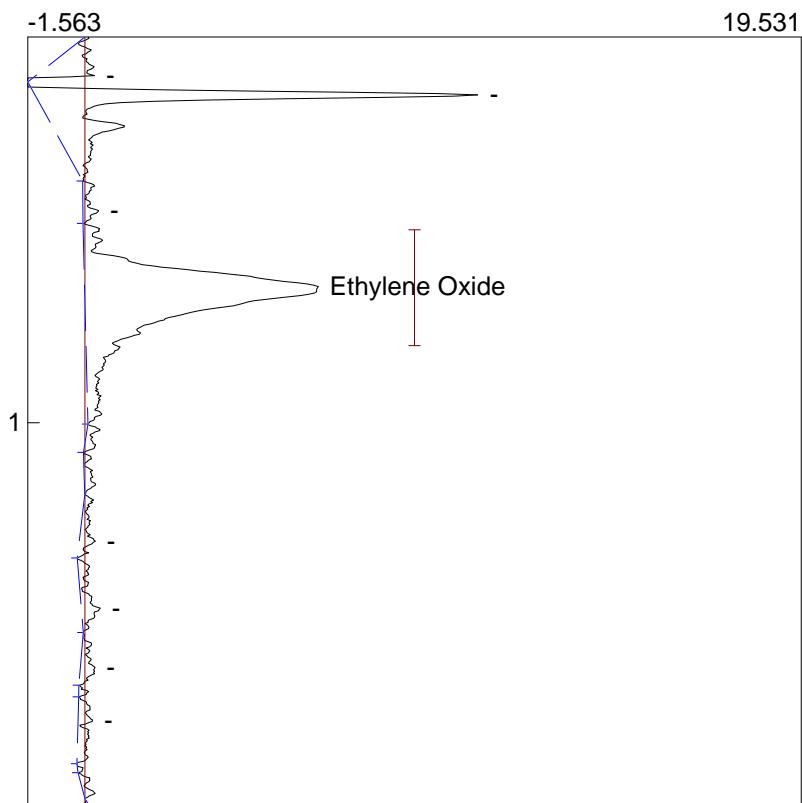
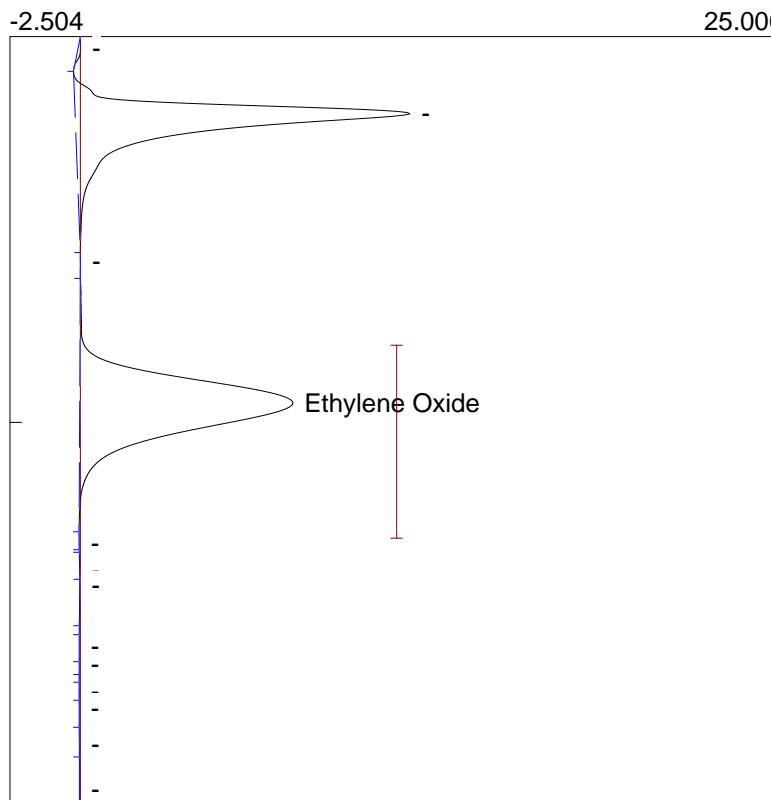
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_21.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	68.2708
1			68.2708

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	50.2746
1			50.2746

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:46:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_22.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:46:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

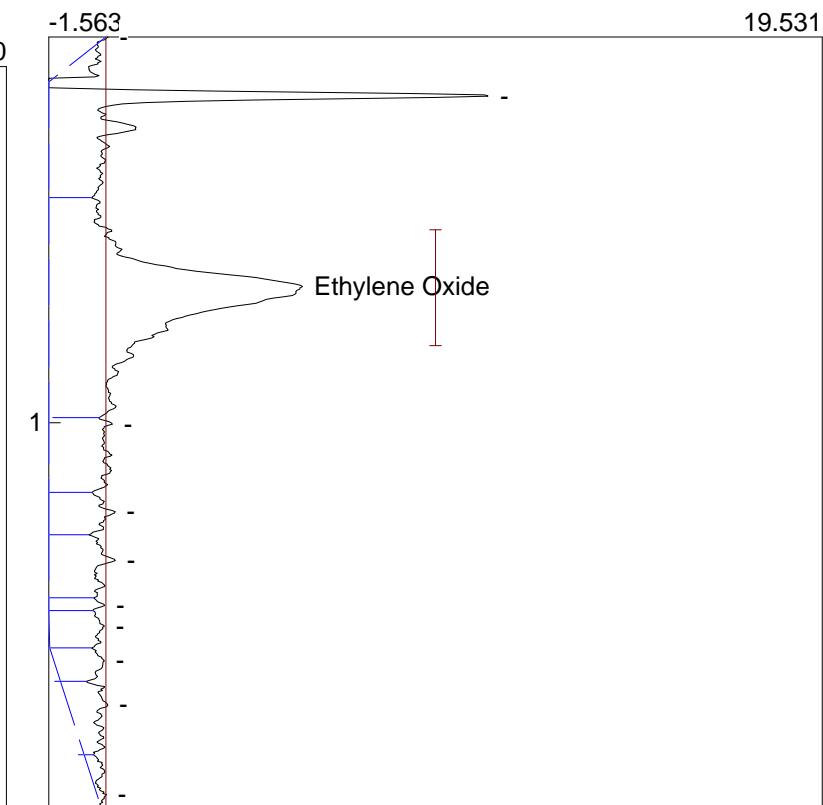
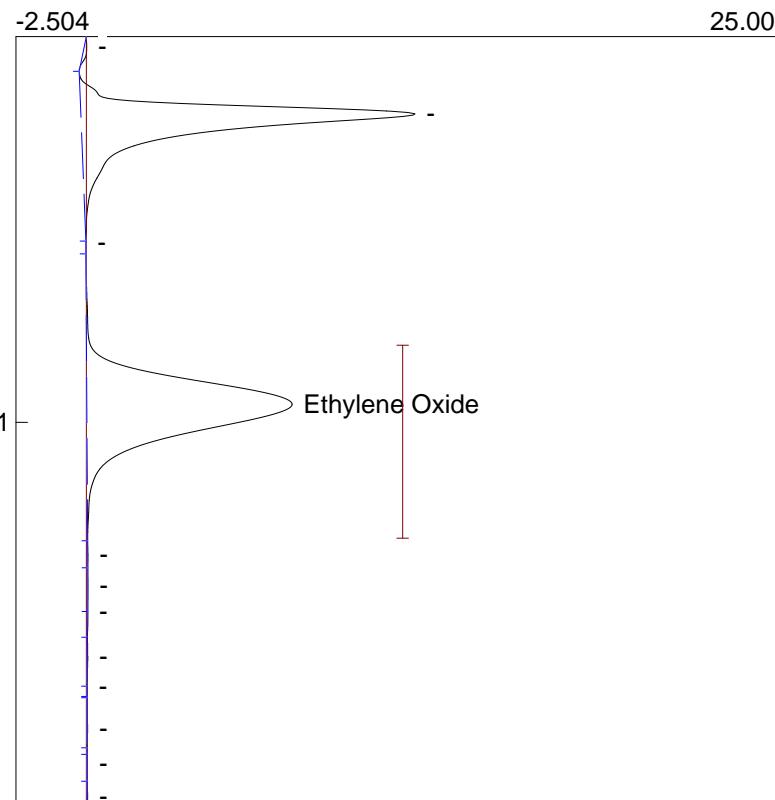
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_22.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	66.3508
1			66.3508

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	195.6884
1			195.6884

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:49:03

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_23.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:49:03

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

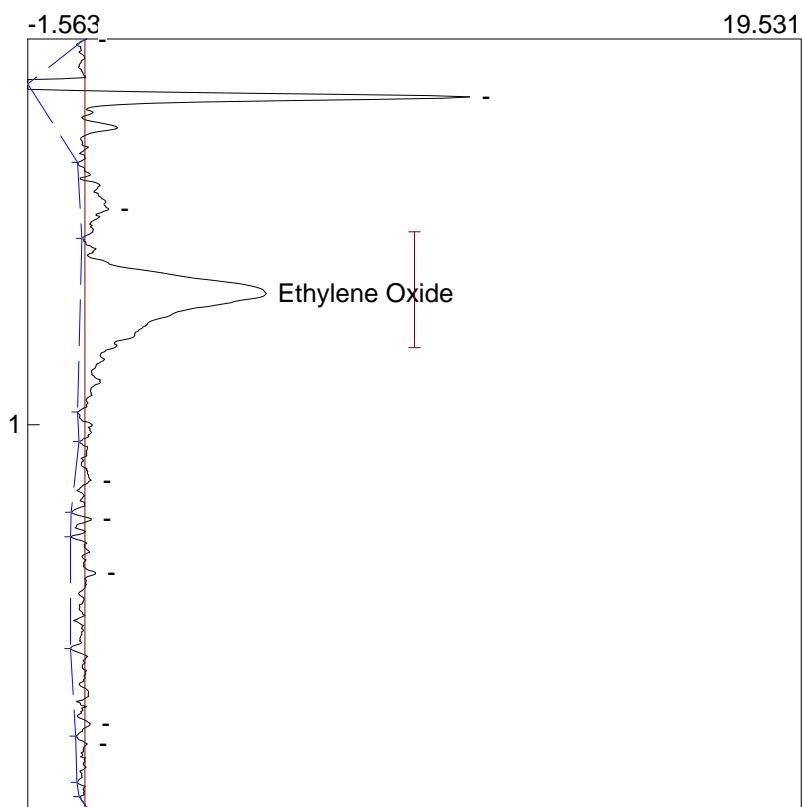
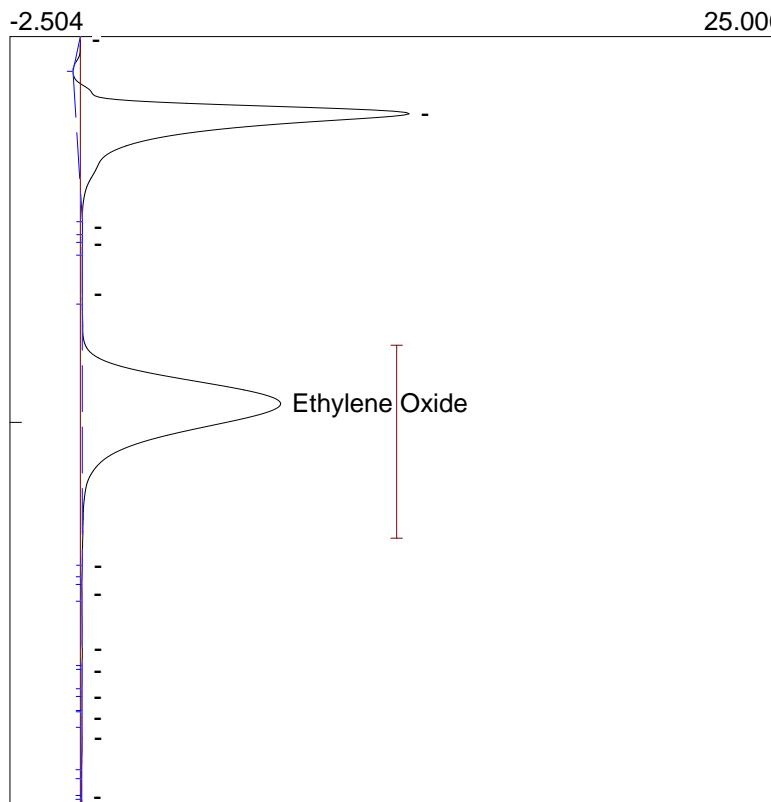
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_23.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	63.7297
1			63.7297

Number	Component	Retention	Area
1	Ethylene Oxide	0.660	40.9493
1			40.9493

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:51:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_24.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:51:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

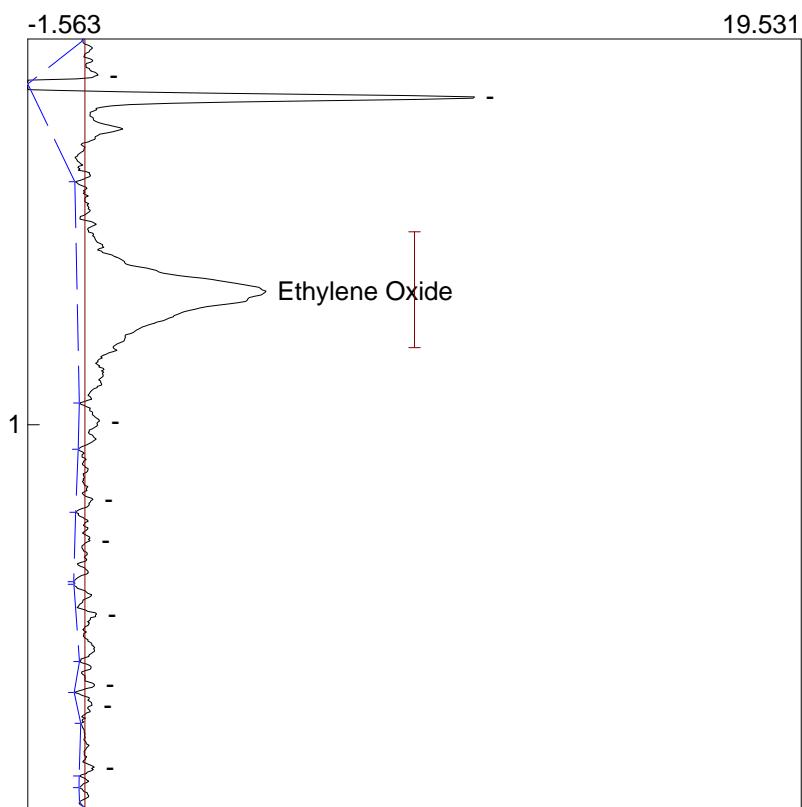
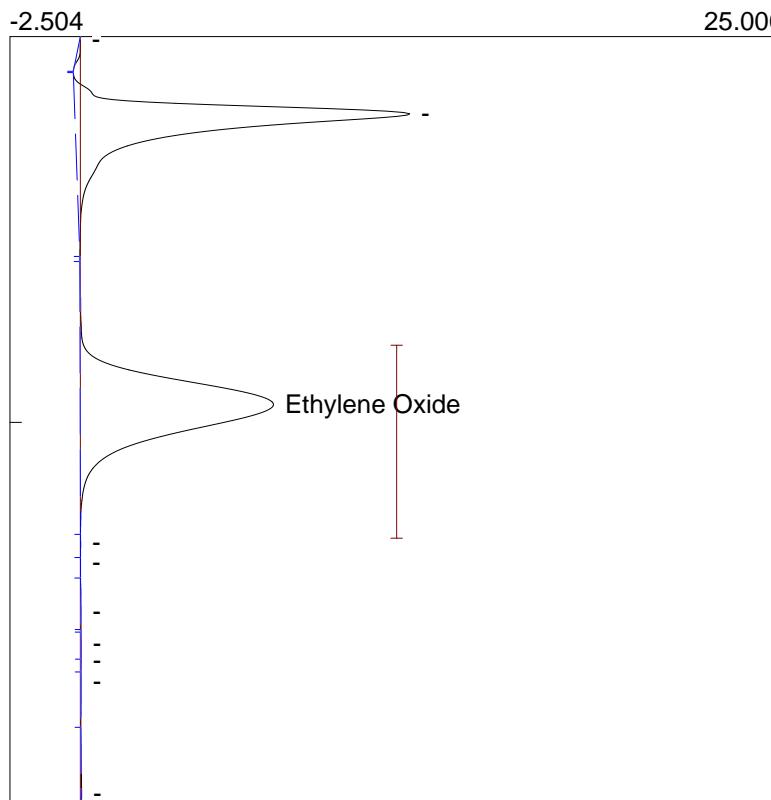
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_24.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	62.1694
1			62.1694

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	48.3558
1			48.3558

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:53:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_25.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:53:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

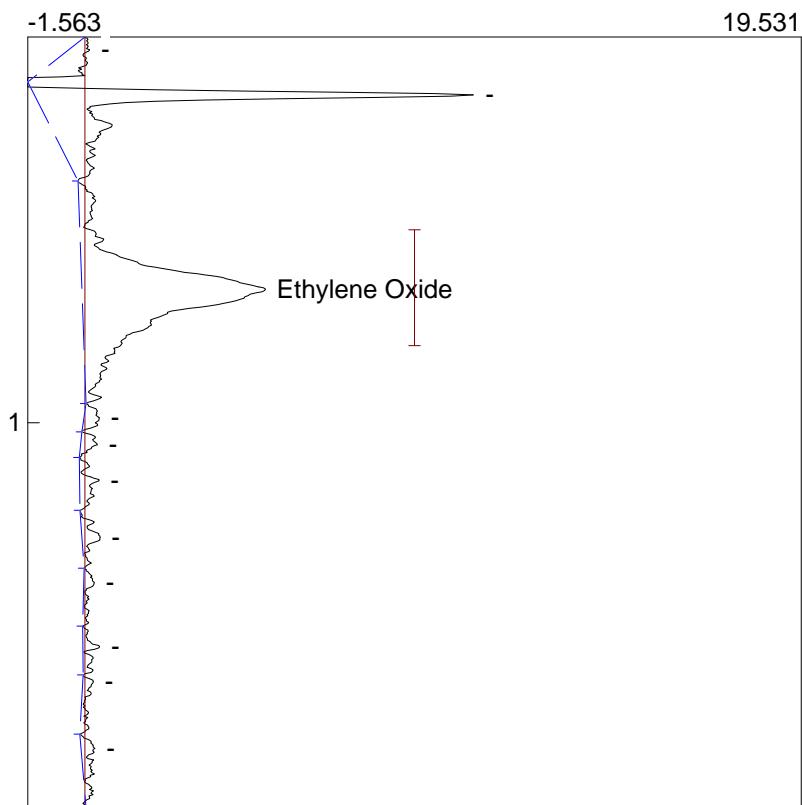
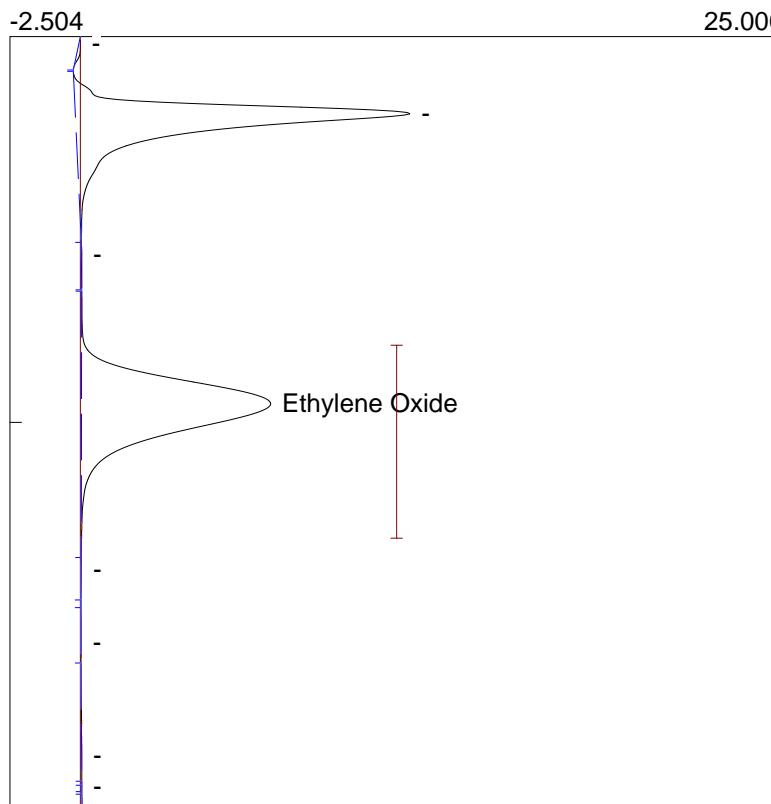
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_25.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	60.9683
1			60.9683

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	46.1002
1			46.1002

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:55:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_26.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:55:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

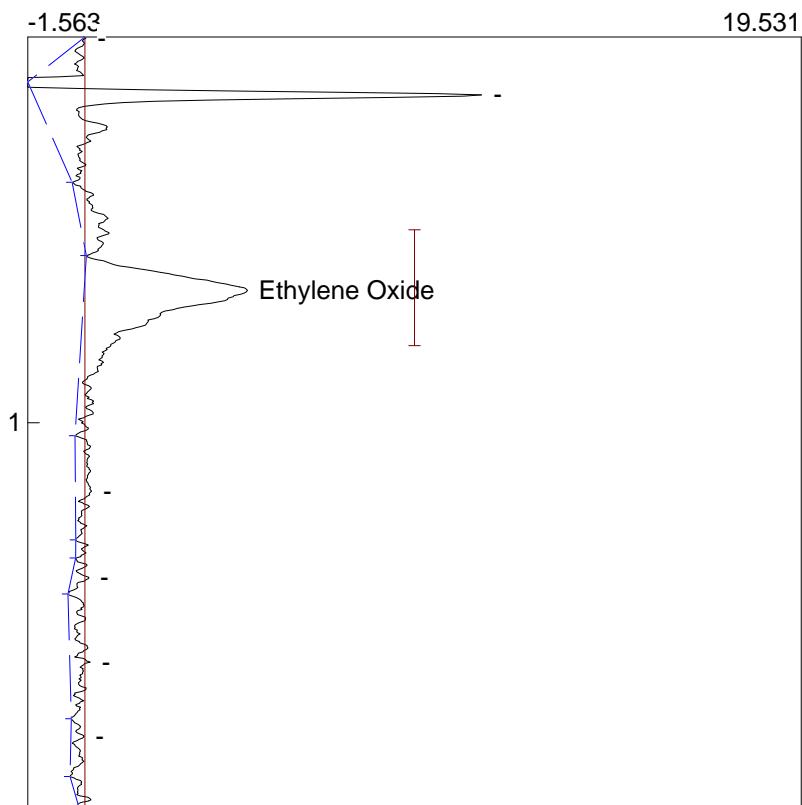
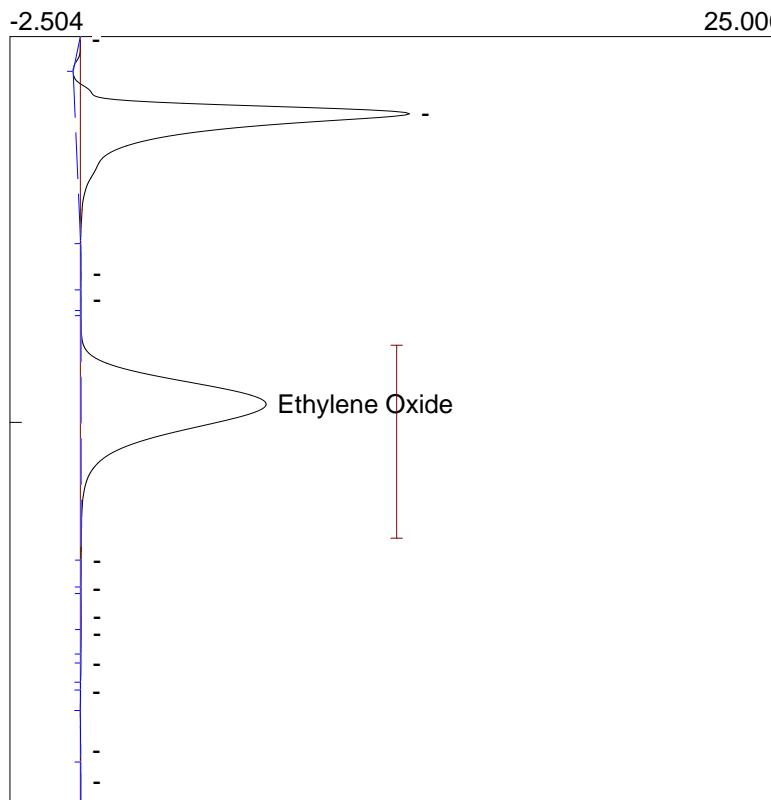
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_26.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	59.2694
1			59.2694

Number	Component	Retention	Area
1	Ethylene Oxide	0.656	36.2522
1			36.2522

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:57:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_27.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:57:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

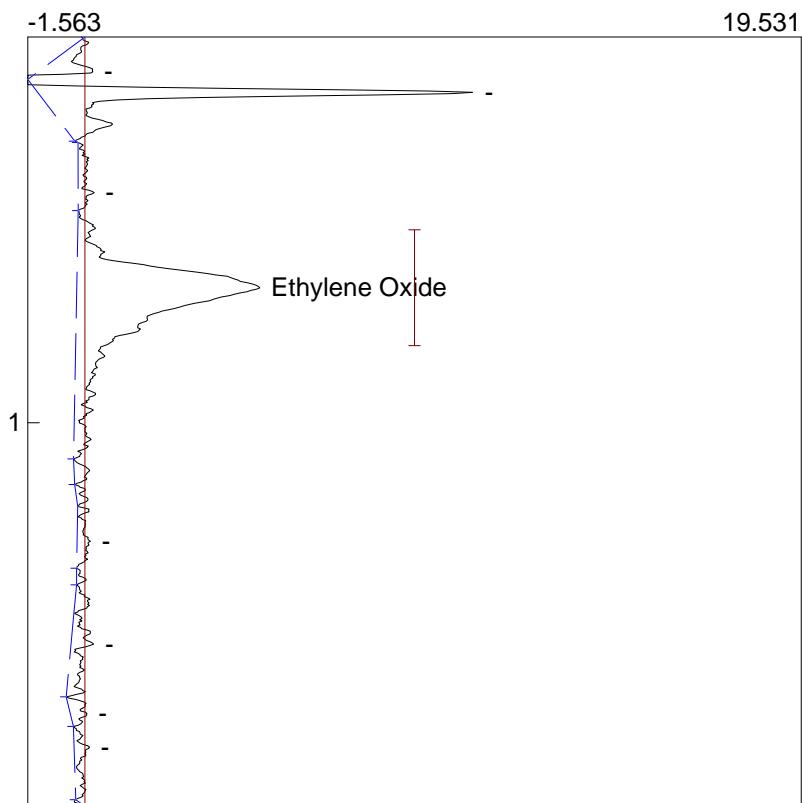
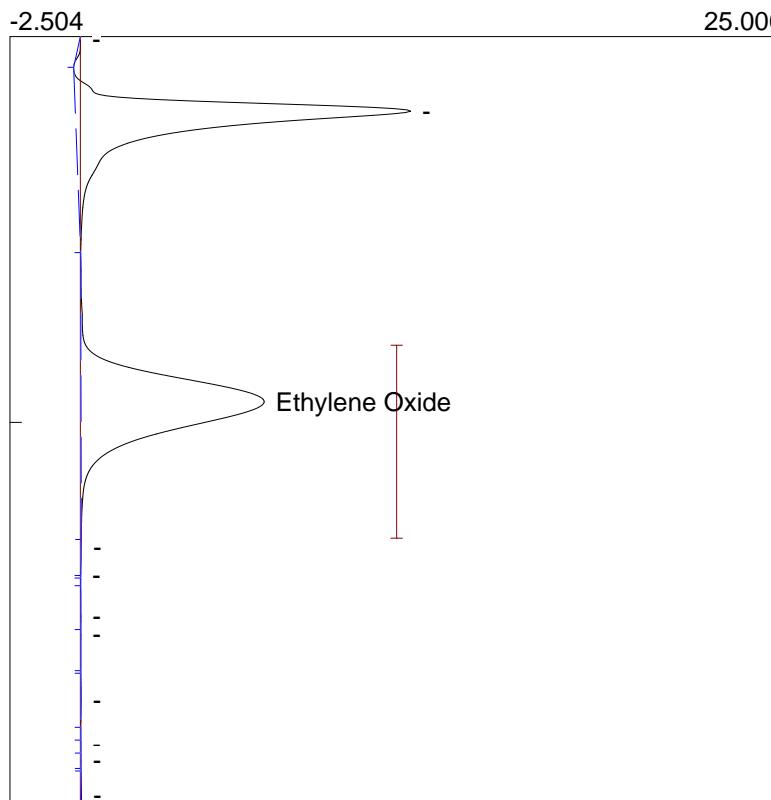
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_27.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	59.0924
1			59.0924

Number	Component	Retention	Area
1	Ethylene Oxide	0.650	46.2403
1			46.2403

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:59:44

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_28.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 11:59:44

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

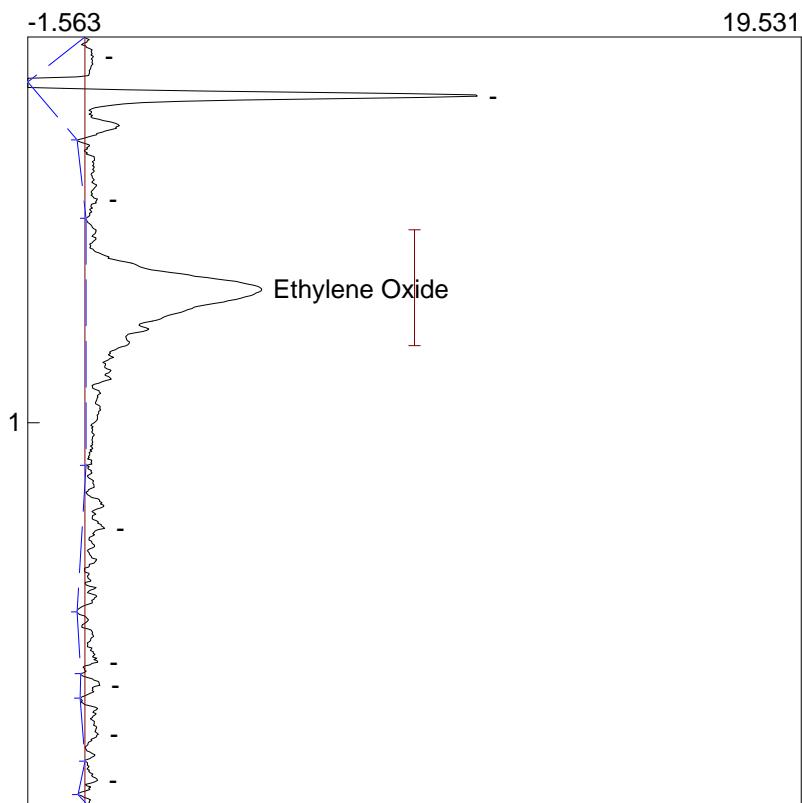
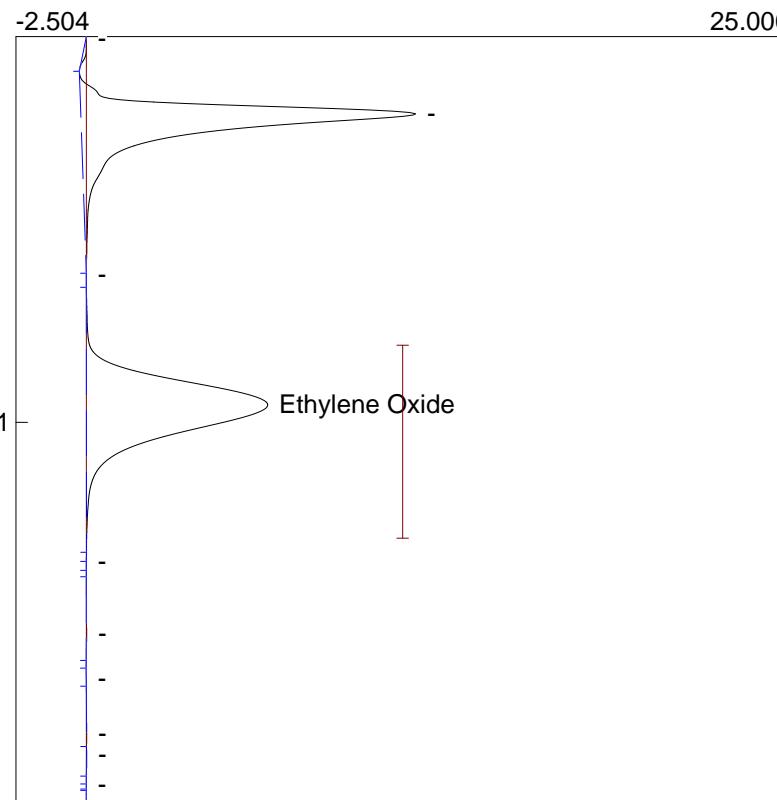
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_28.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	58.6490
1			58.6490

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	42.6766
1			42.6766

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:01:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_29.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:01:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

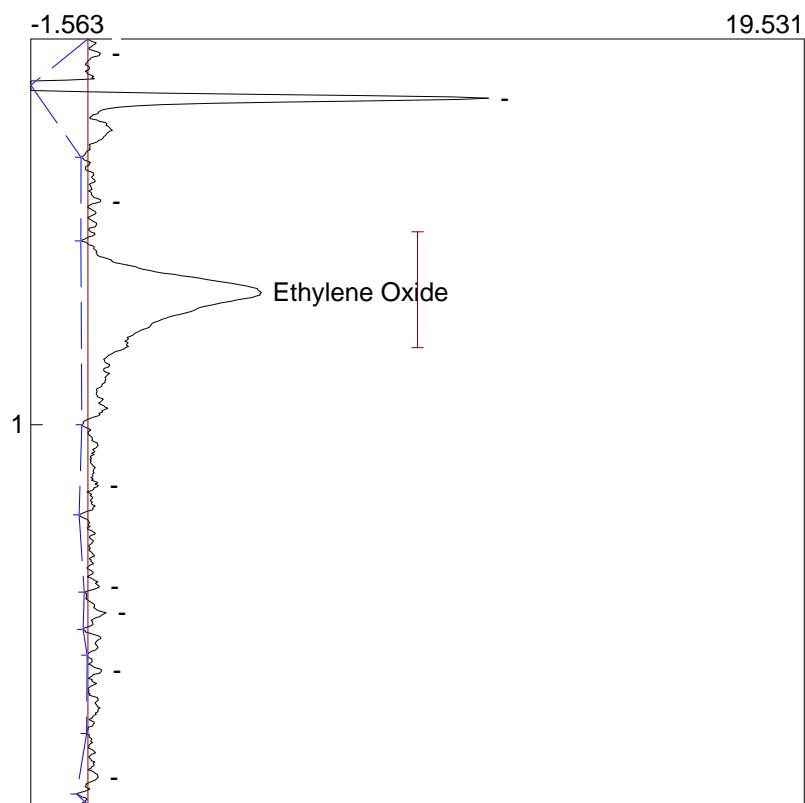
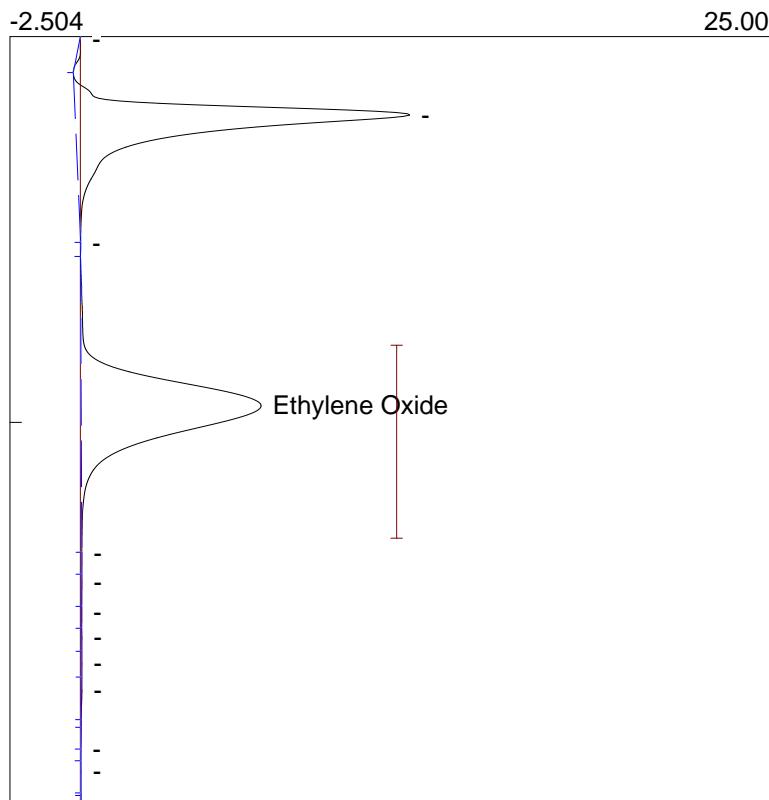
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_29.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.956	58.5726
1			58.5726

Number	Component	Retention	Area
1	Ethylene Oxide	0.656	44.4162
1			44.4162

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:03:57

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_30.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:03:57

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

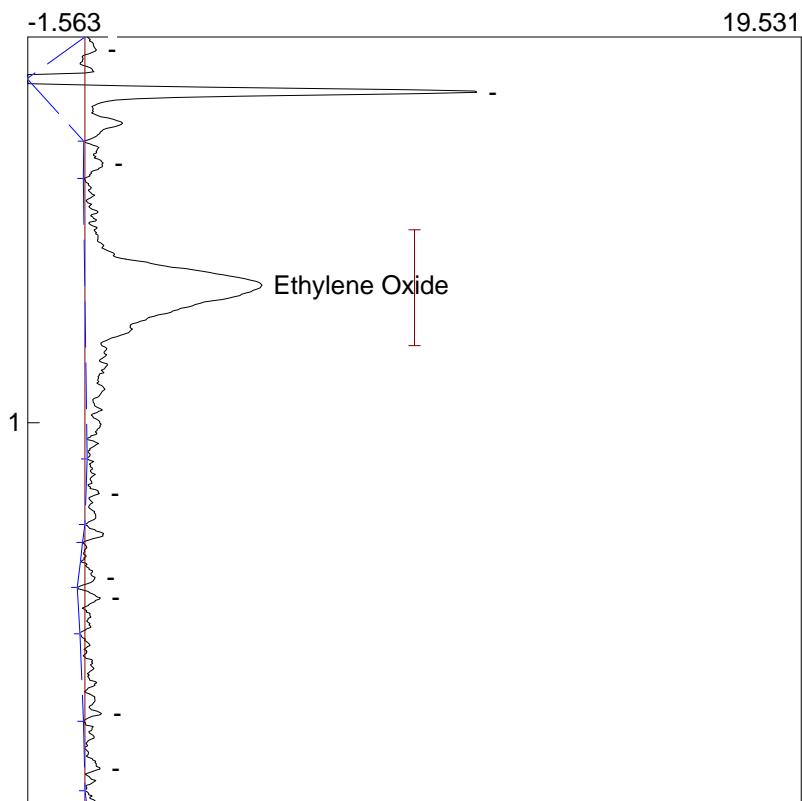
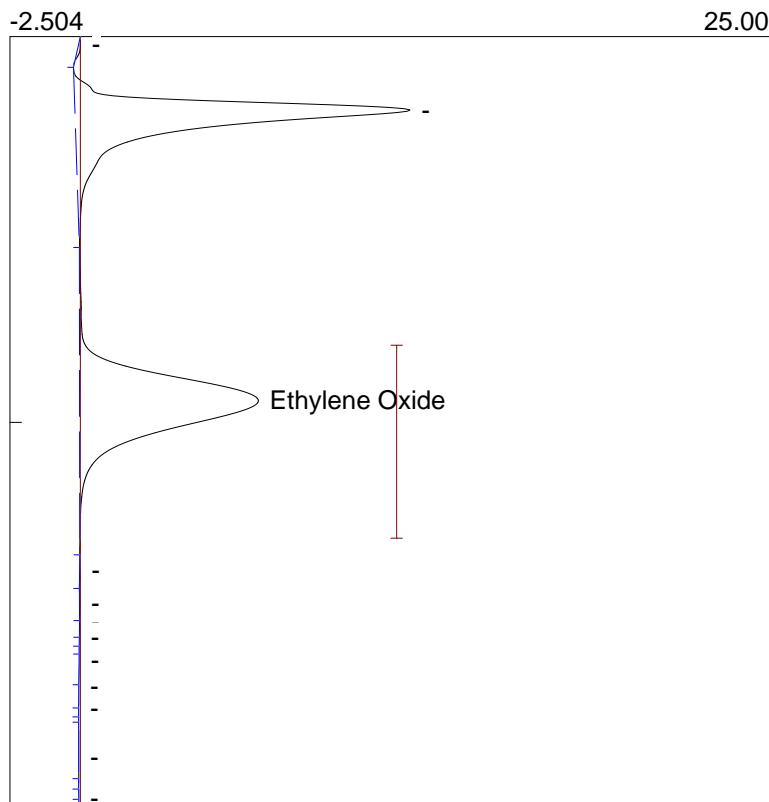
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_30.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	58.6158
1			58.6158

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	44.6014
1			44.6014

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:06:03

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_31.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:06:03

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

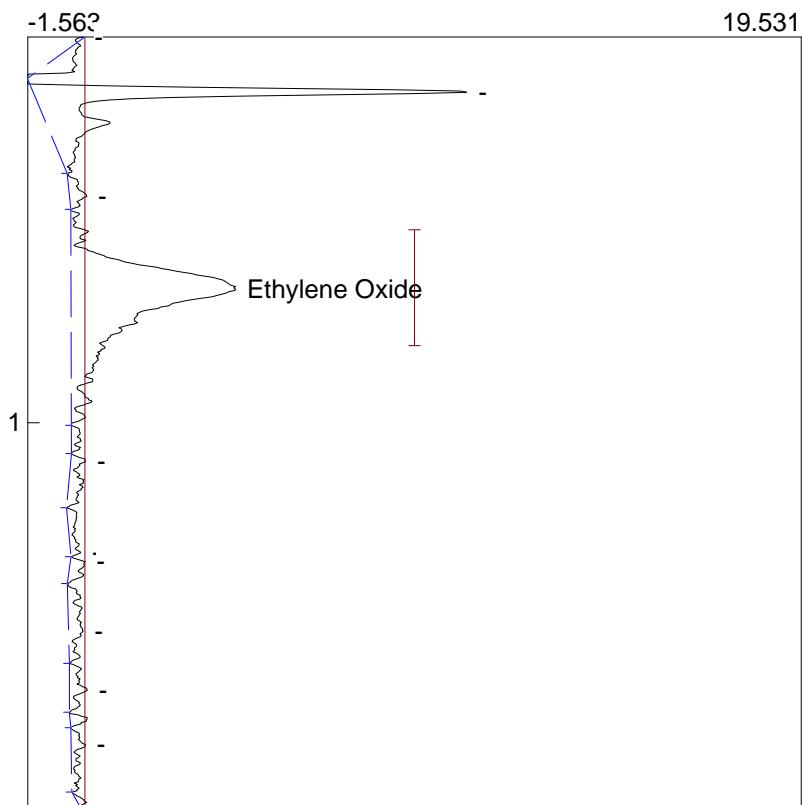
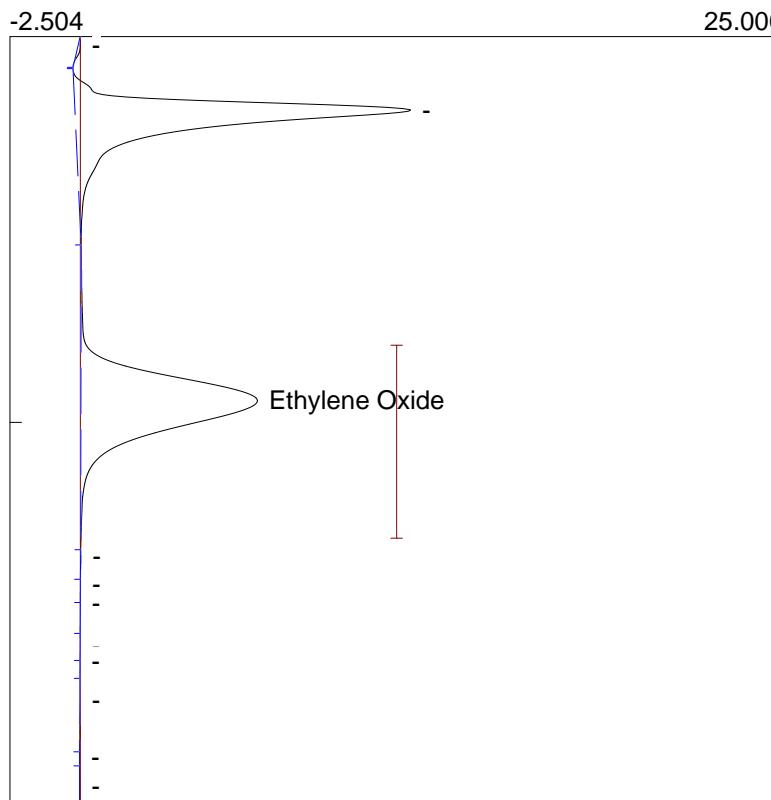
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_31.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	57.3664
1			57.3664

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	41.5858
1			41.5858

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:08:09

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_32.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:08:09

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

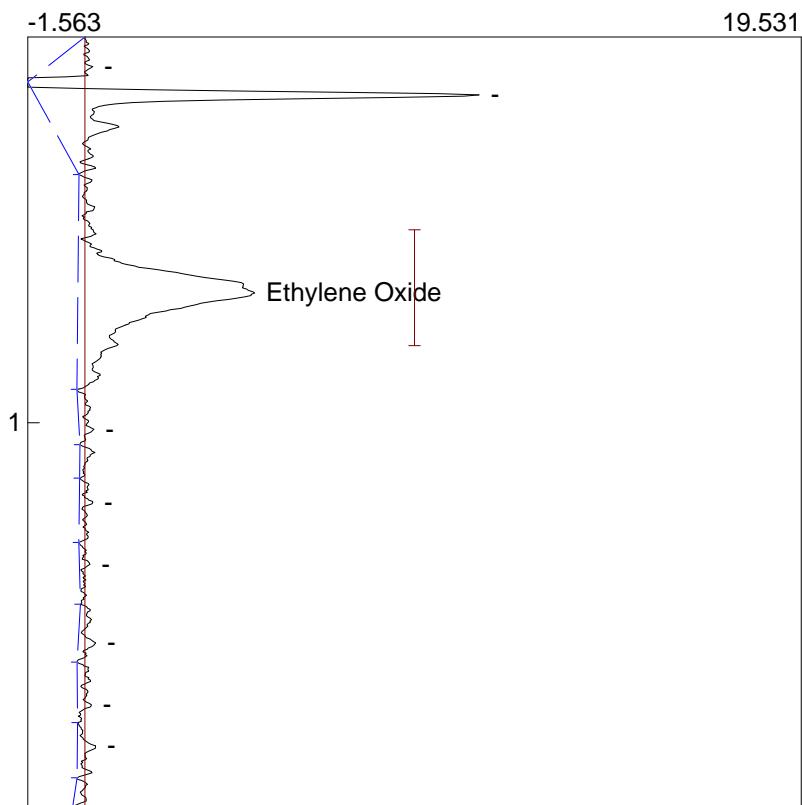
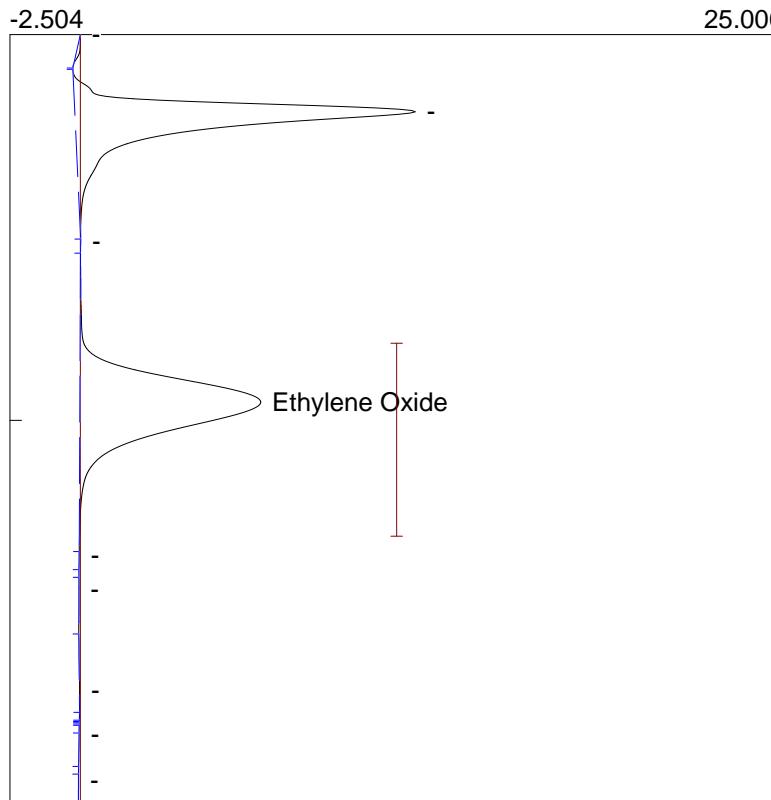
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_32.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	58.6652
1			58.6652

Number	Component	Retention	Area
1	Ethylene Oxide	0.663	41.2666
1			41.2666

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:10:15

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_33.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:10:15

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

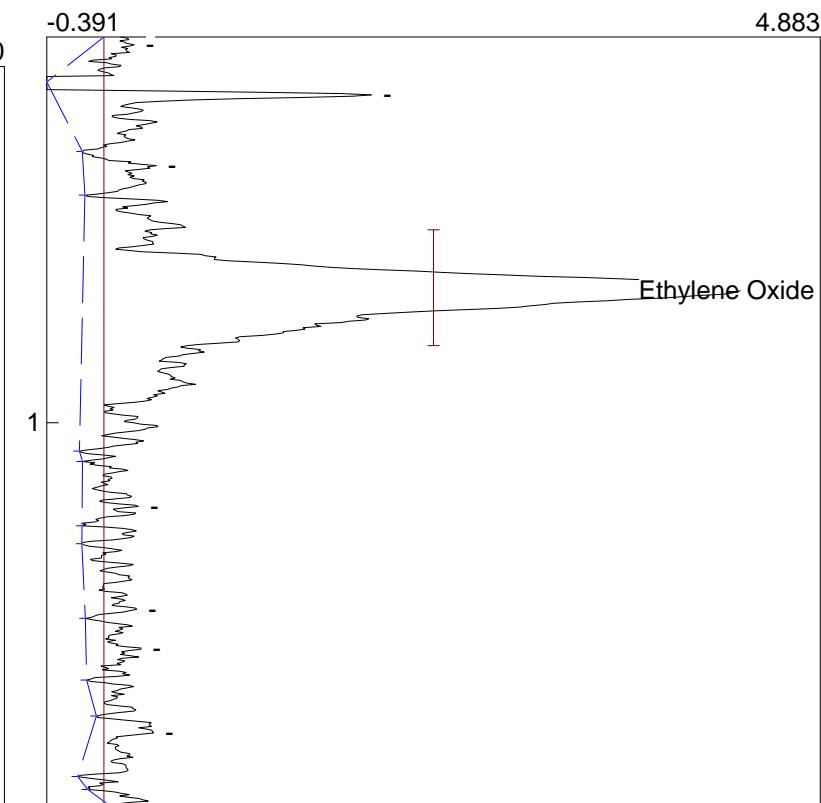
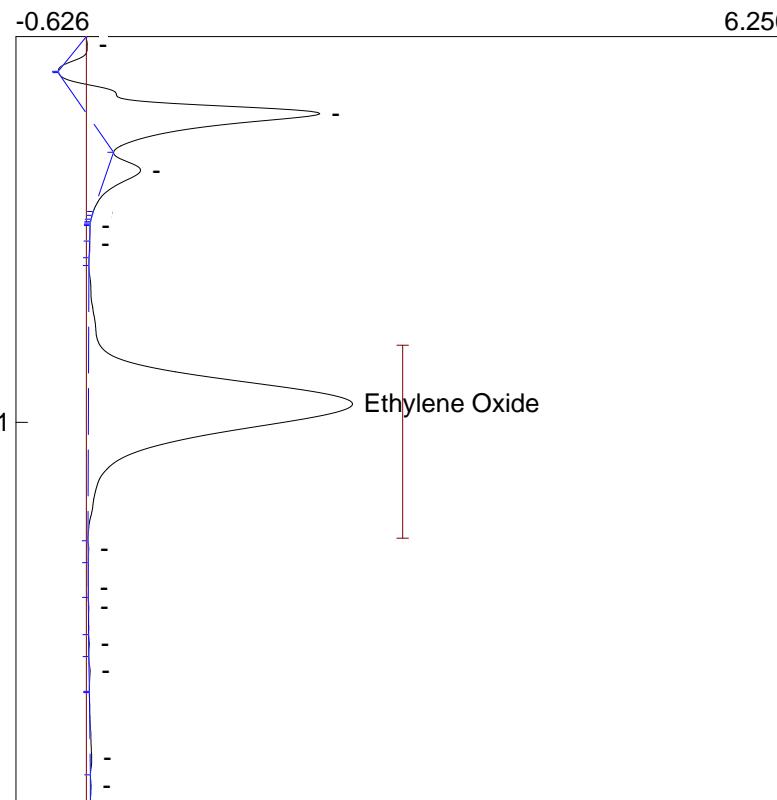
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_33.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	22.2954
1			22.2954

Number	Component	Retention	Area
1	Ethylene Oxide	0.656	45.5065
1			45.5065

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:12:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_34.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:12:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

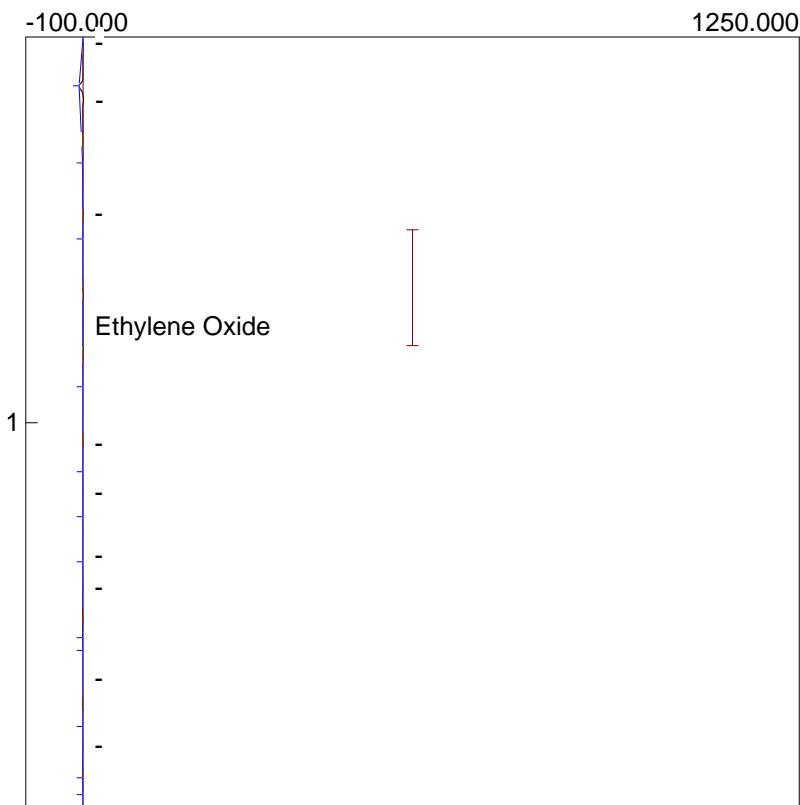
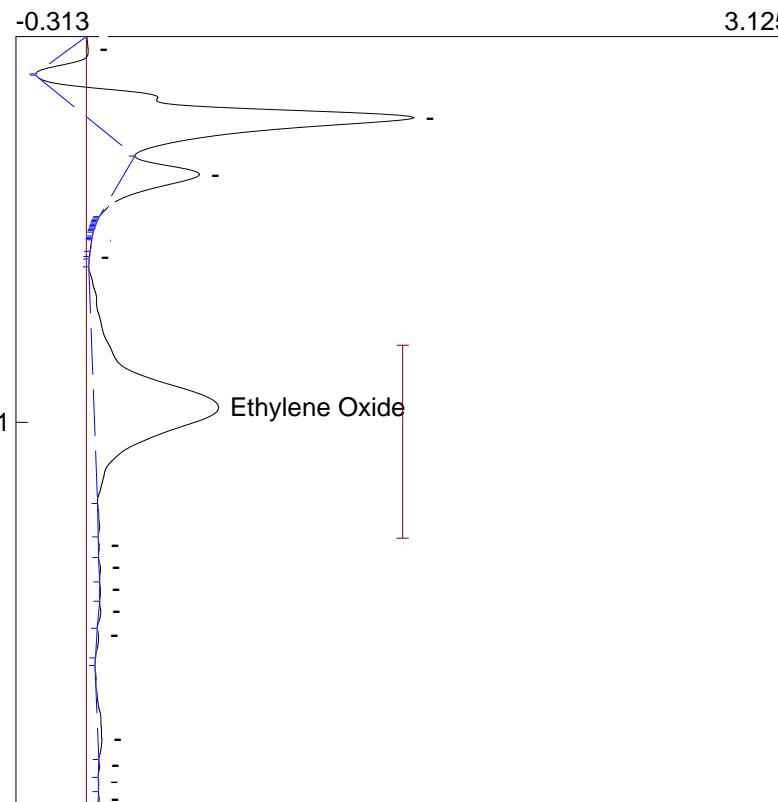
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_34.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.960	5.7812
1			5.7812

Number	Component	Retention	Area
1	Ethylene Oxide	0.750	13.5511
1			13.5511

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:15:04

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_35.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:15:04

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

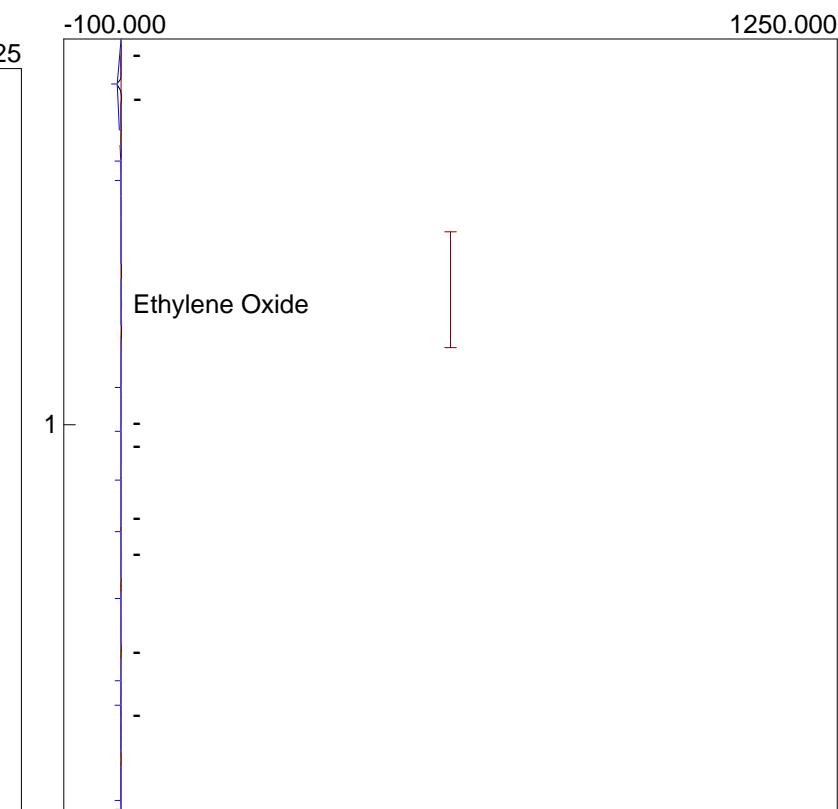
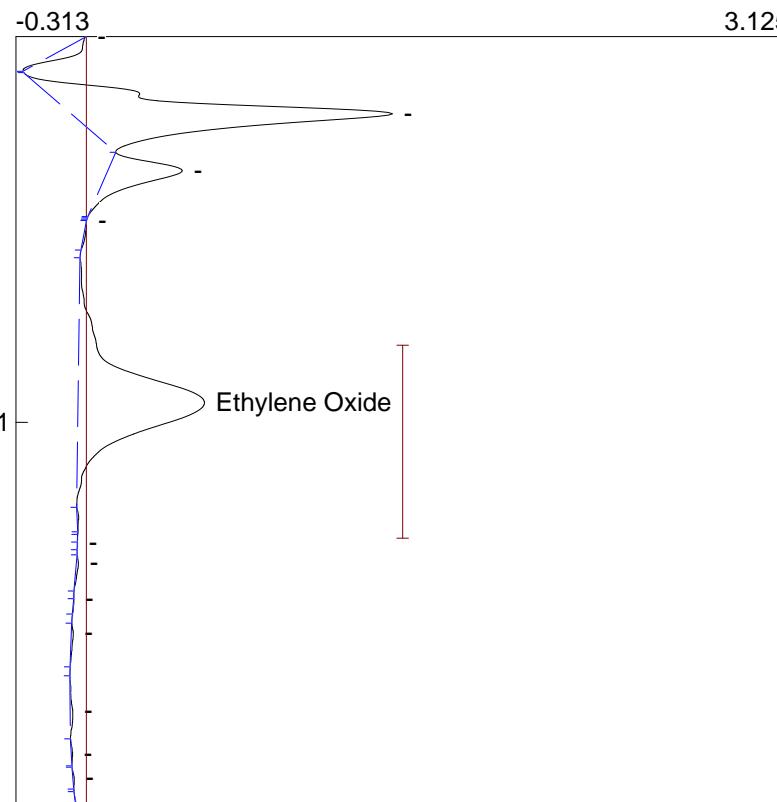
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_35.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	5.7904
1			5.7904

Number	Component	Retention	Area
1	Ethylene Oxide	0.686	15.2918
1			15.2918

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:17:10

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_36.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:17:10

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

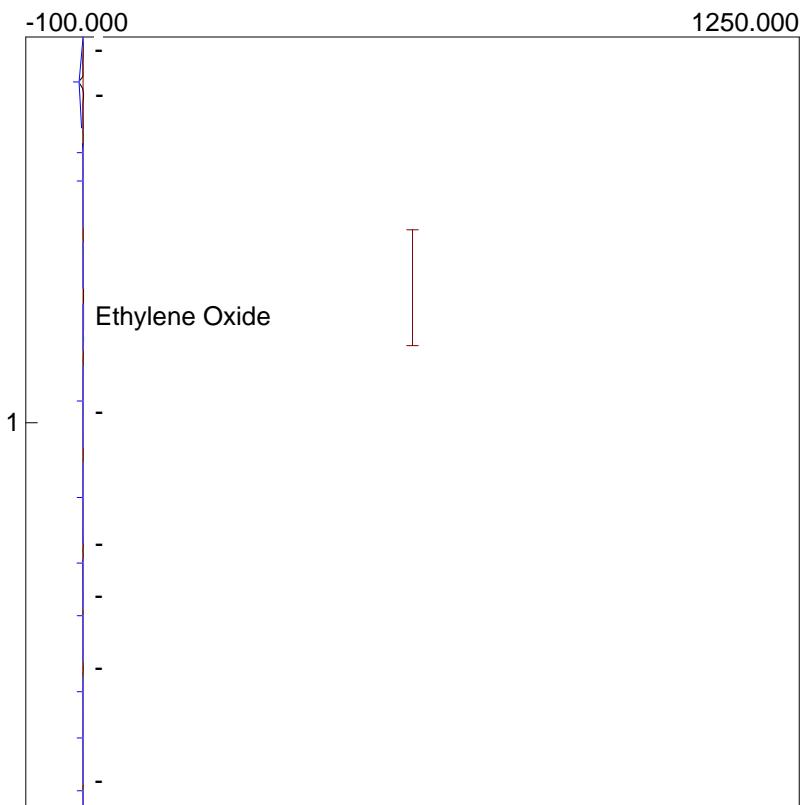
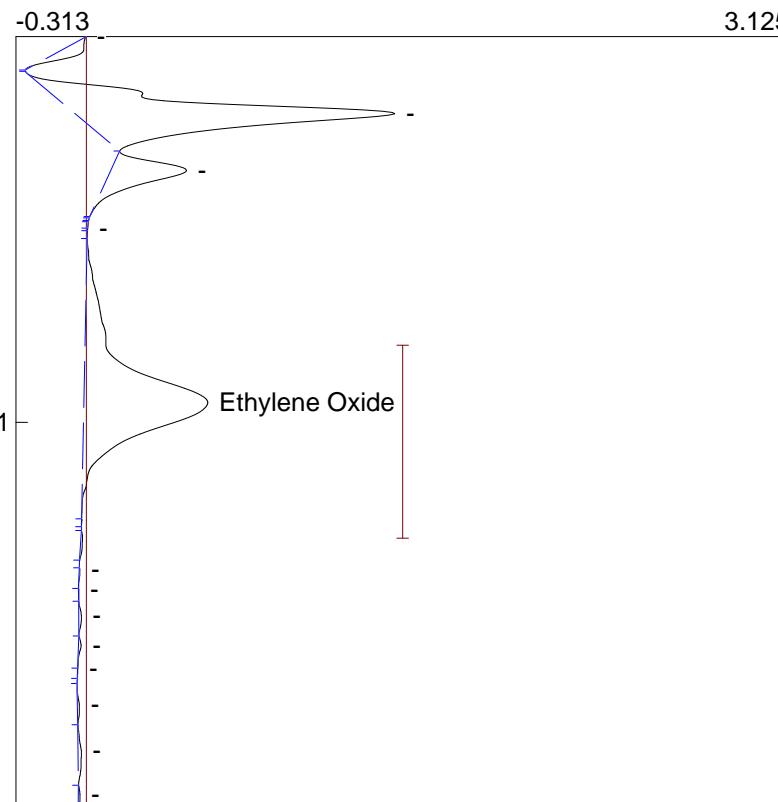
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_36.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	6.2030
1			6.2030

Number	Component	Retention	Area
1	Ethylene Oxide	0.723	19.9862
1			19.9862

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:19:16

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_37.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:19:16

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

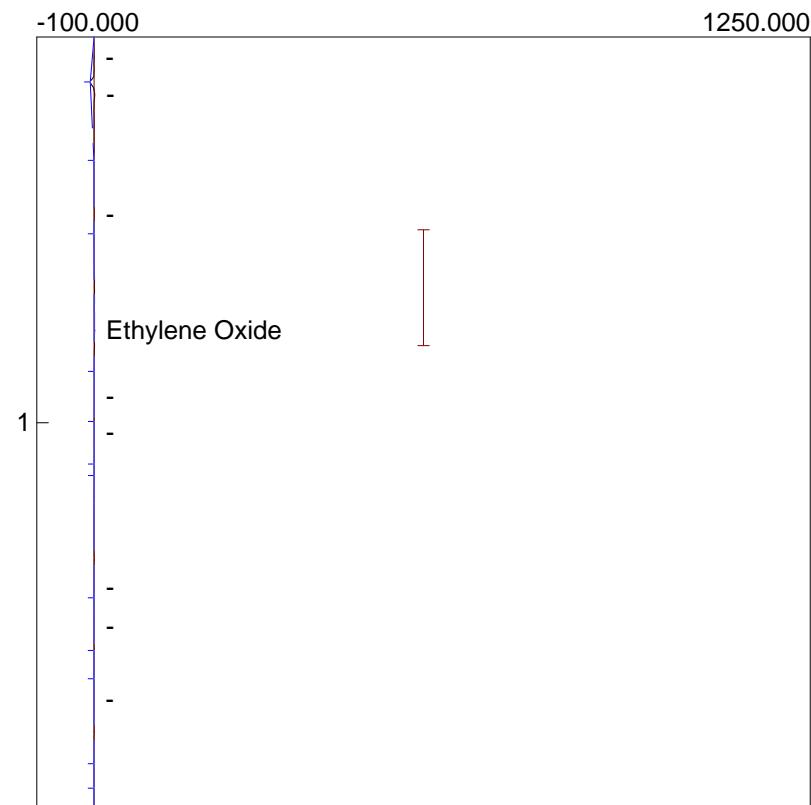
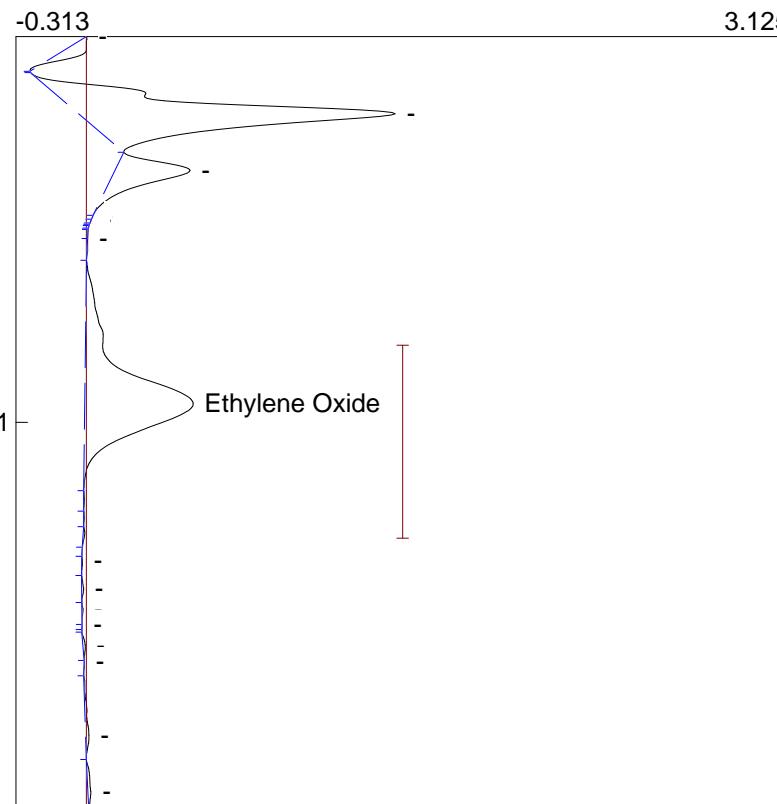
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_37.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	4.9763
1			4.9763

Number	Component	Retention	Area
1	Ethylene Oxide	0.760	14.1893
1			14.1893

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:21:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_38.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:21:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

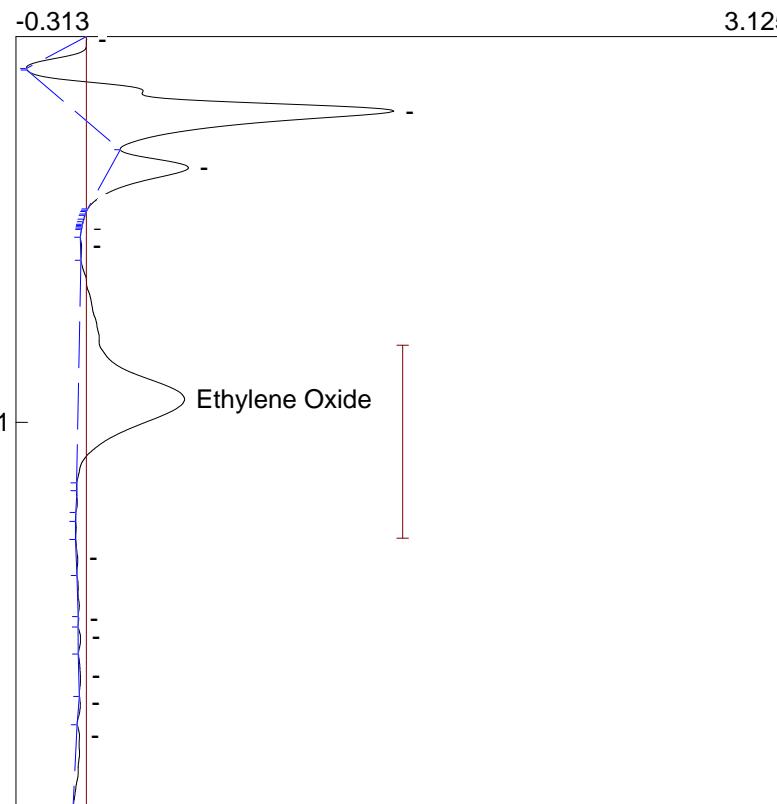
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_38.()

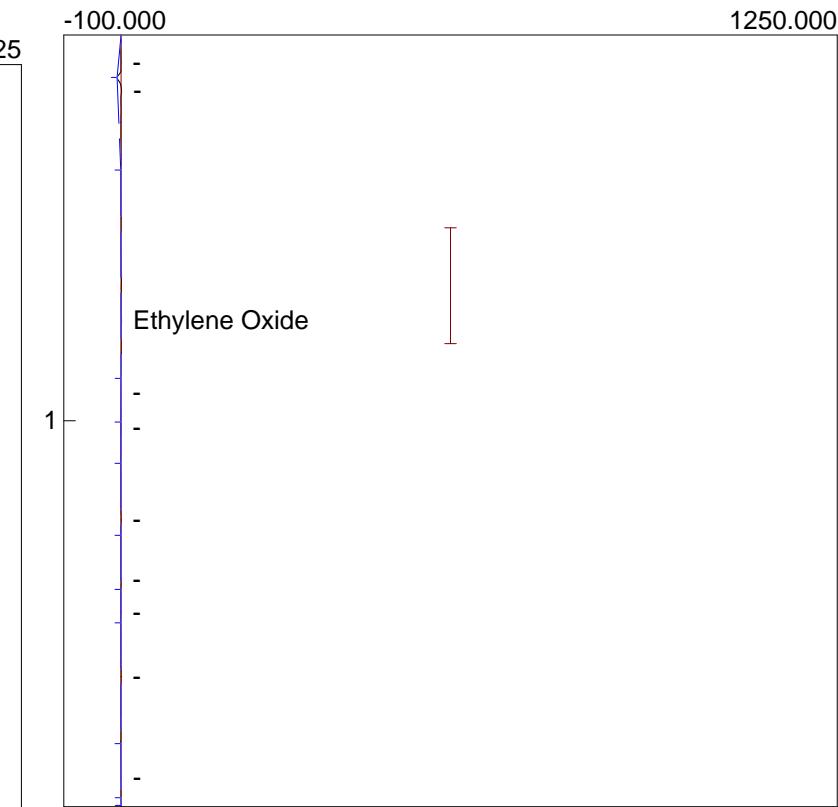
Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.940	5.1411
1			5.1411



Number	Component	Retention	Area
1	Ethylene Oxide	0.740	19.9888
1			19.9888

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:23:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_39.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:23:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

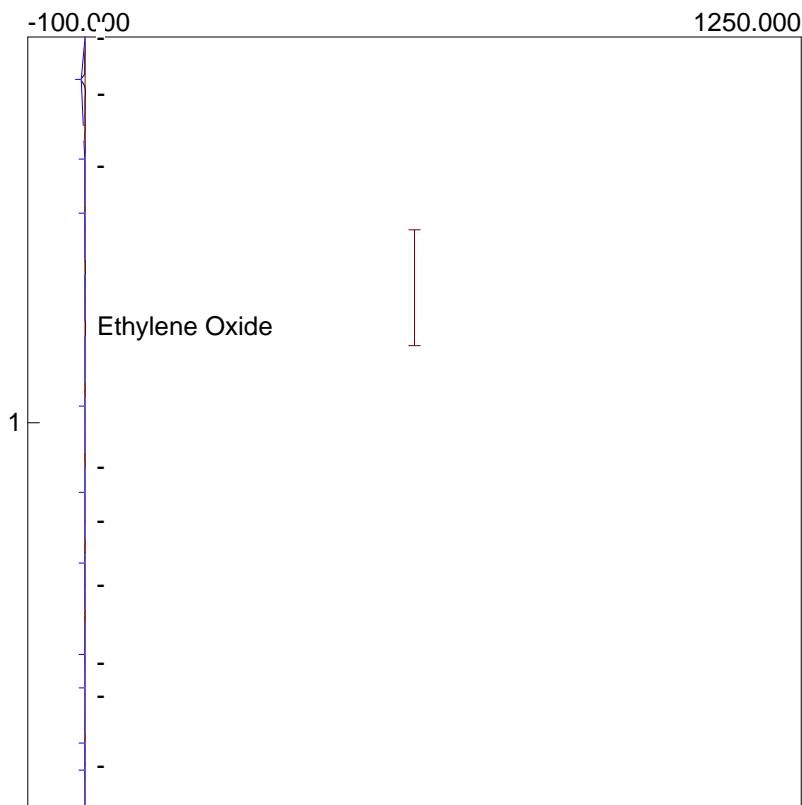
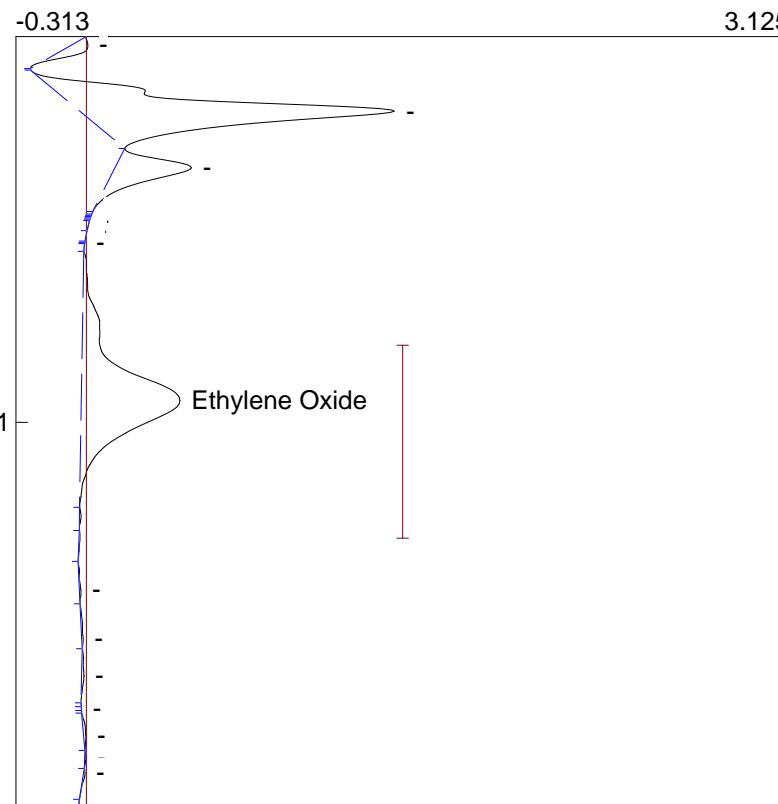
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_39.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	4.9943
1			4.9943

Number	Component	Retention	Area
1	Ethylene Oxide	0.750	18.8332
1			18.8332

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:25:34

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_40.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:25:34

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

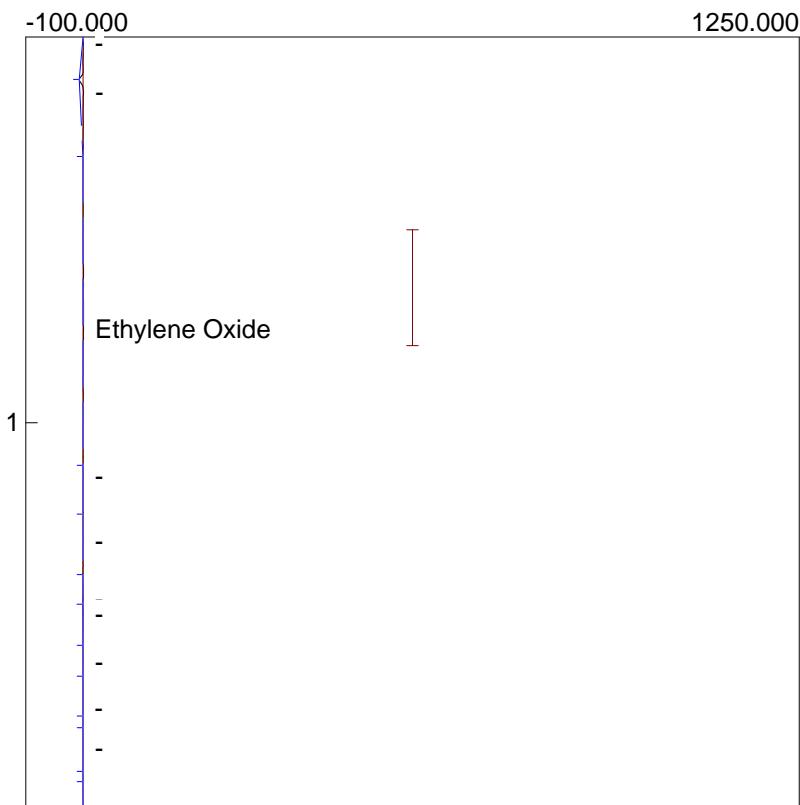
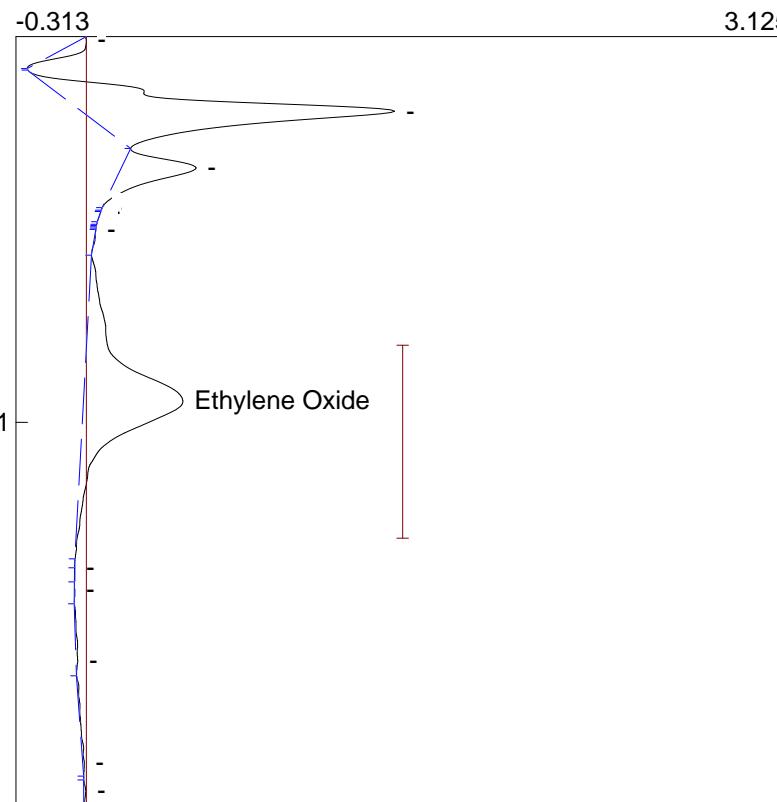
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_40.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	5.3442
1			5.3442

Number	Component	Retention	Area
1	Ethylene Oxide	0.756	25.1822
1			25.1822

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:27:44

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_41.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 1ppm Calibration Gas

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:27:44

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

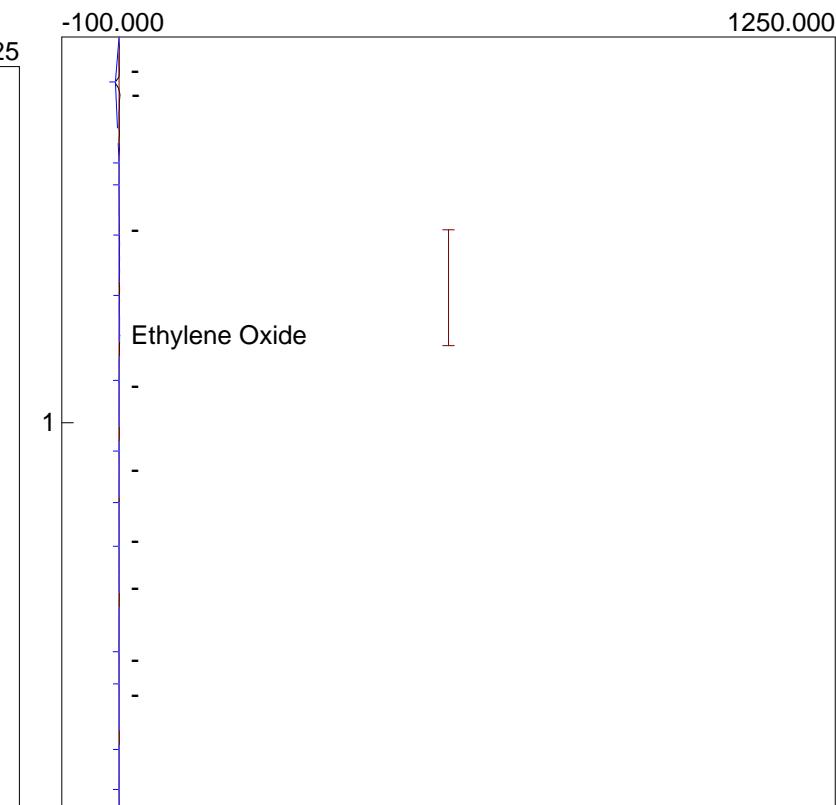
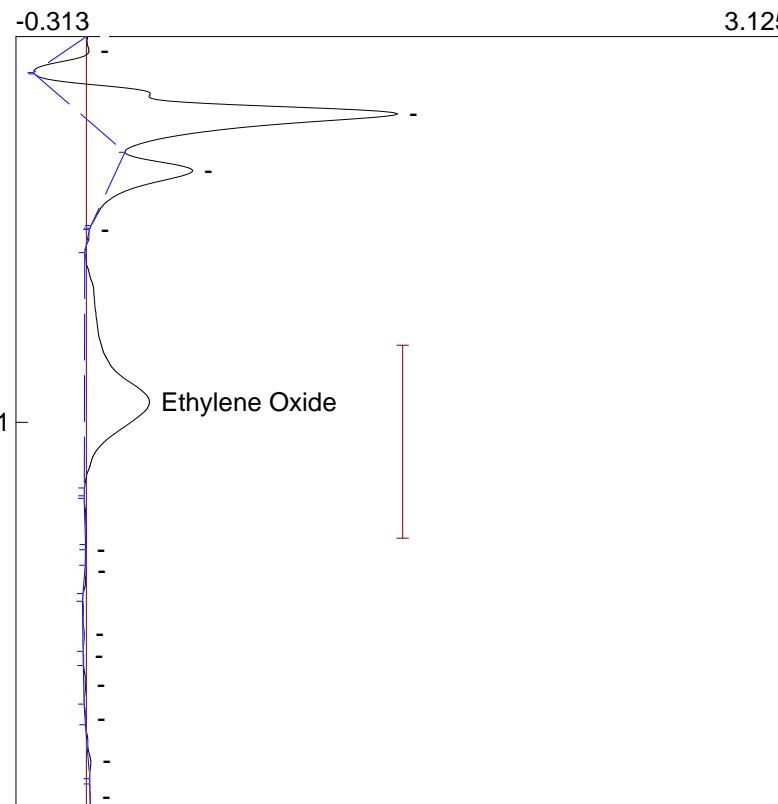
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_41.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	3.5268
1			3.5268

Number	Component	Retention	Area
1	Ethylene Oxide	0.773	5.2966
1			5.2966

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:29:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

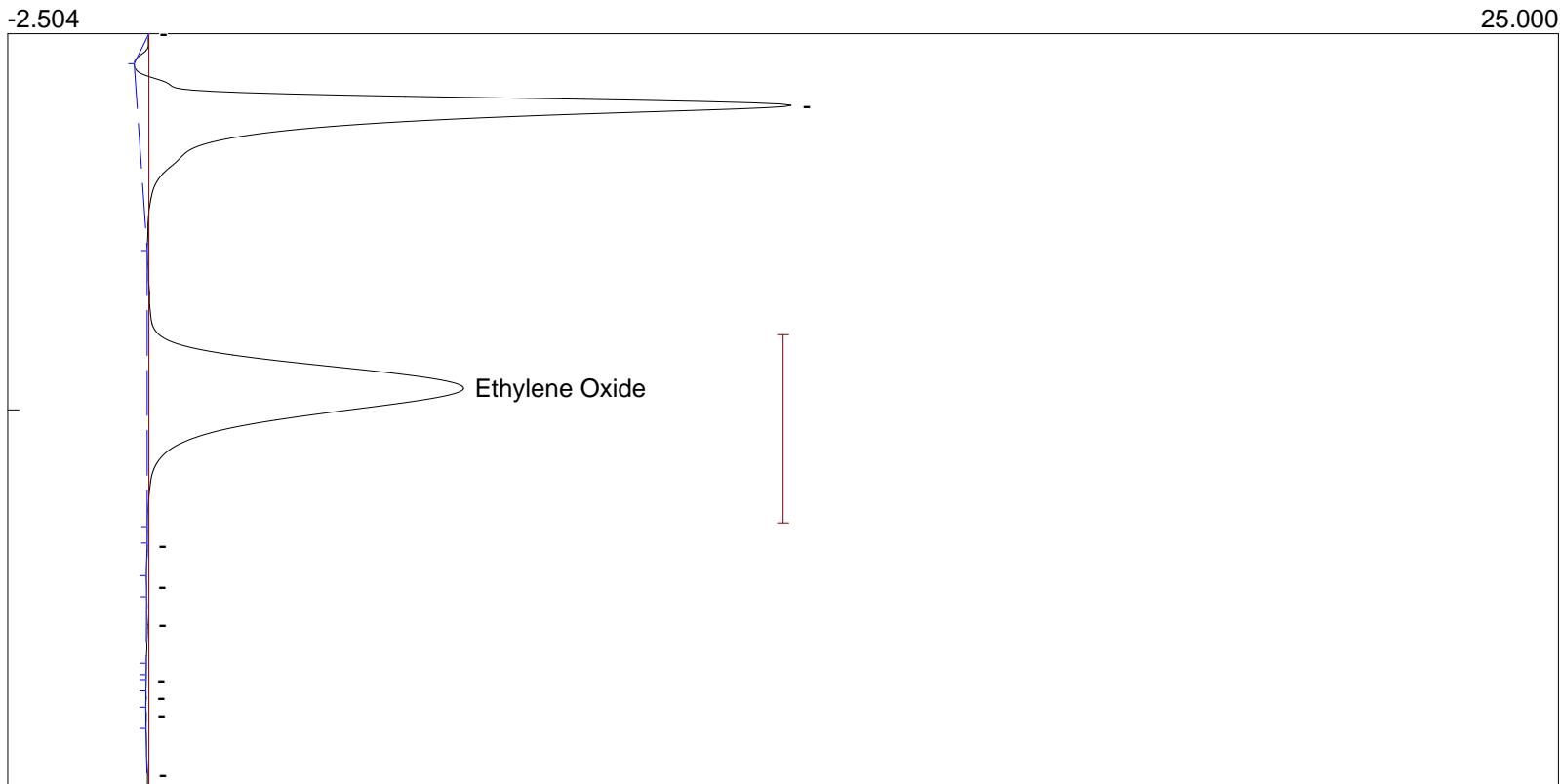
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_42.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	51.3828
1			51.3828

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:32:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

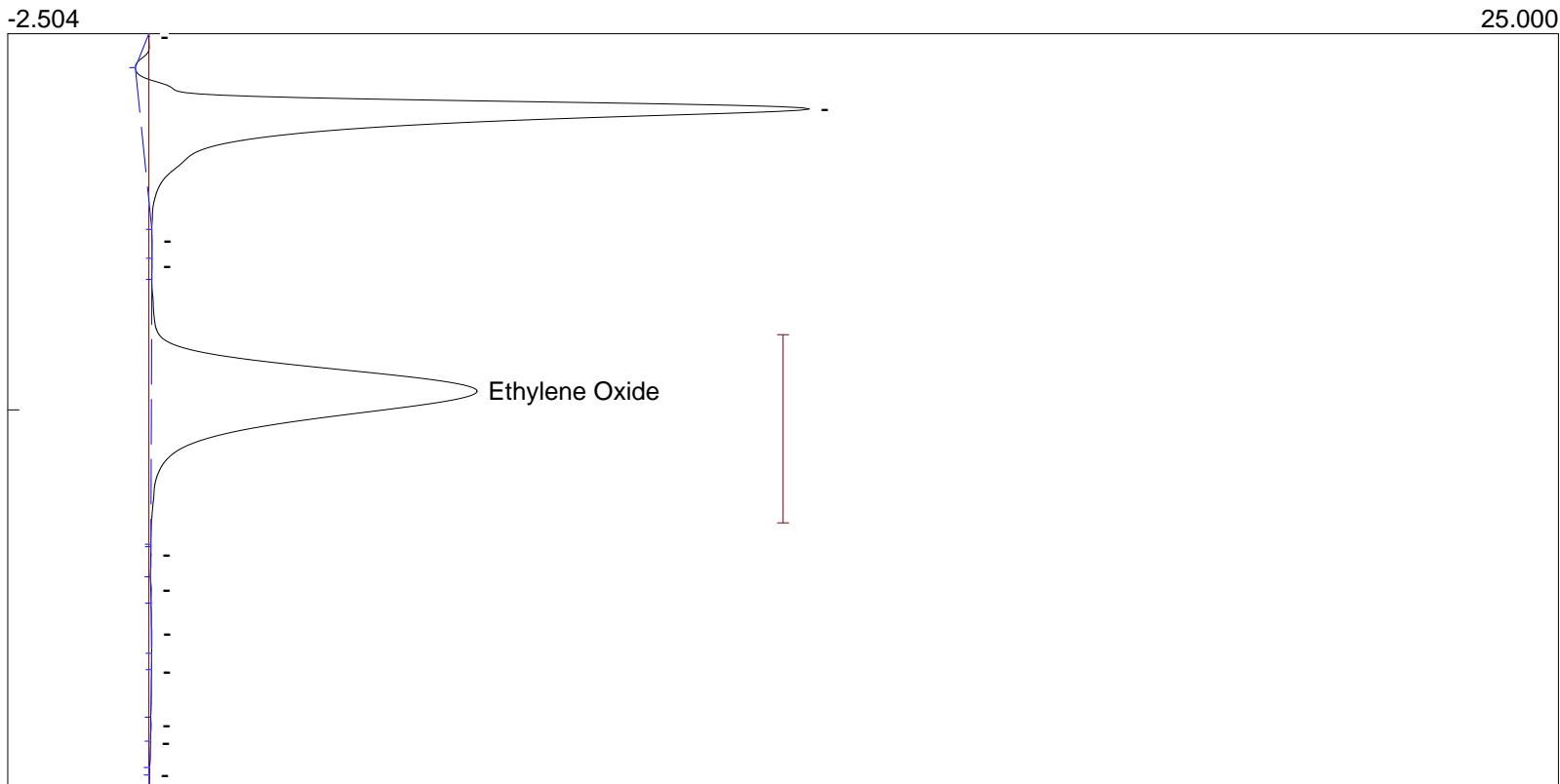
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_43.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.950	52.5793
1			52.5793

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:34:07

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

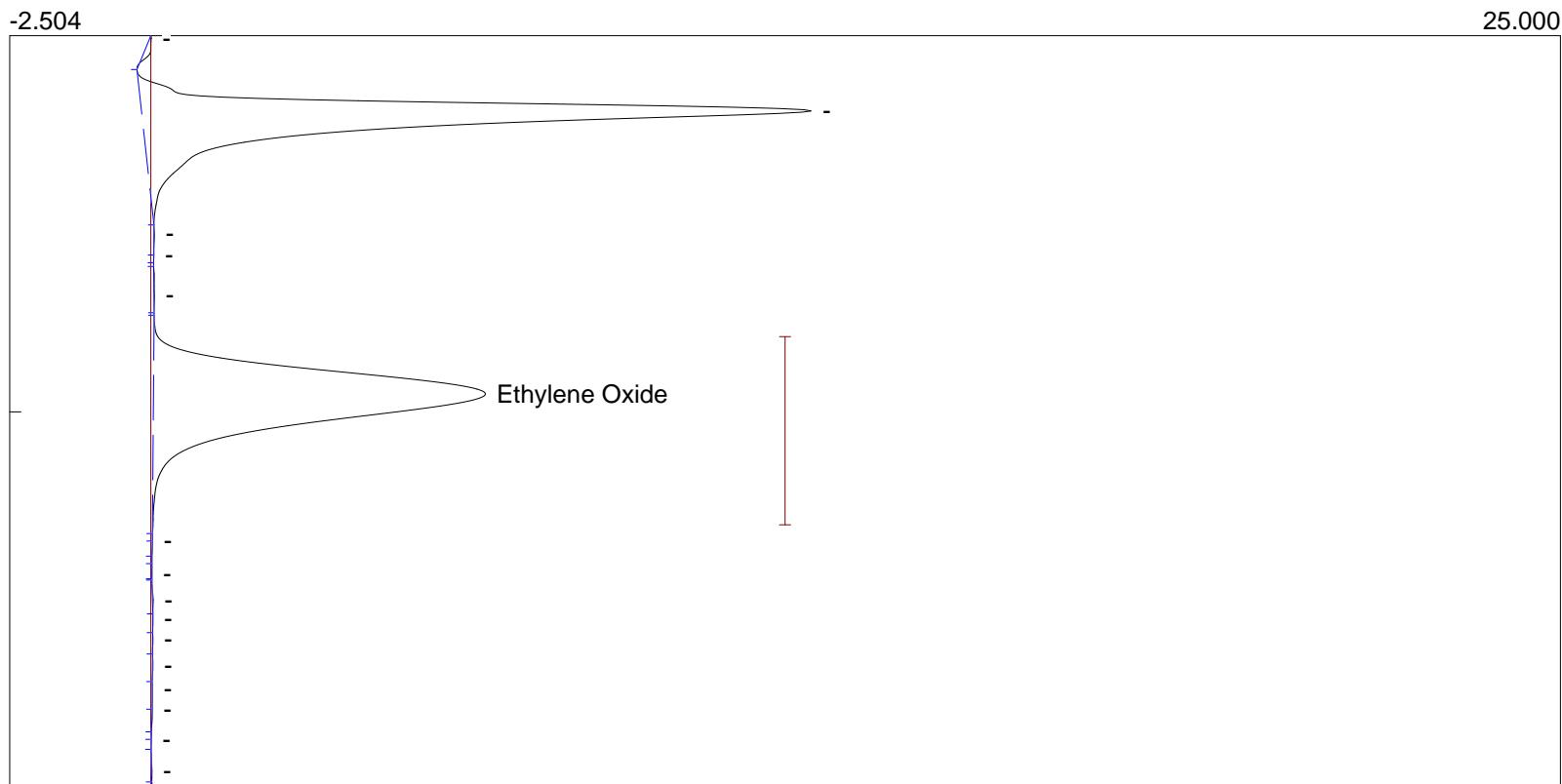
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_44.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.953	52.8178
1			52.8178

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:36:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

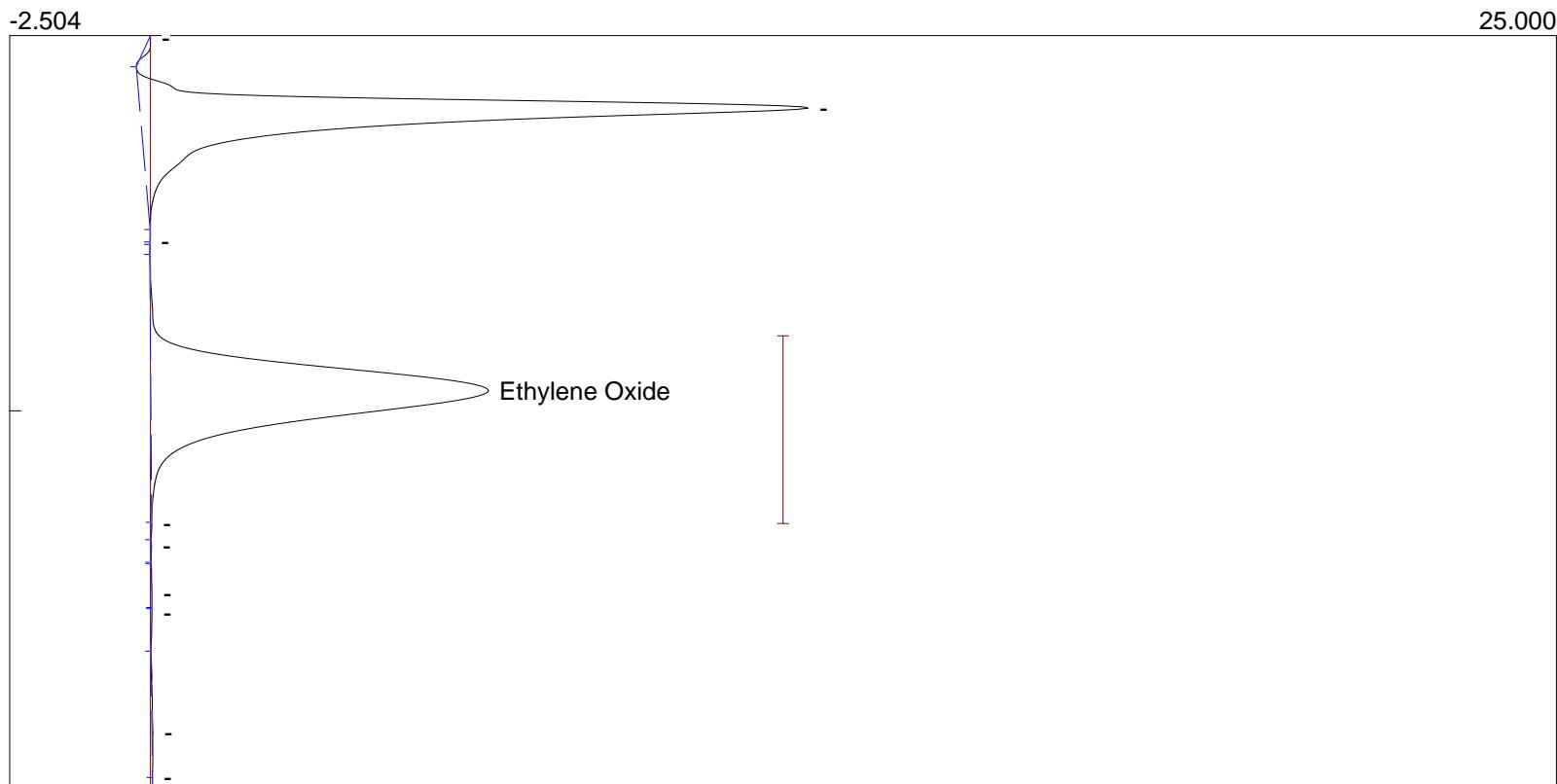
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_45.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	54.5072
1			54.5072

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:38:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

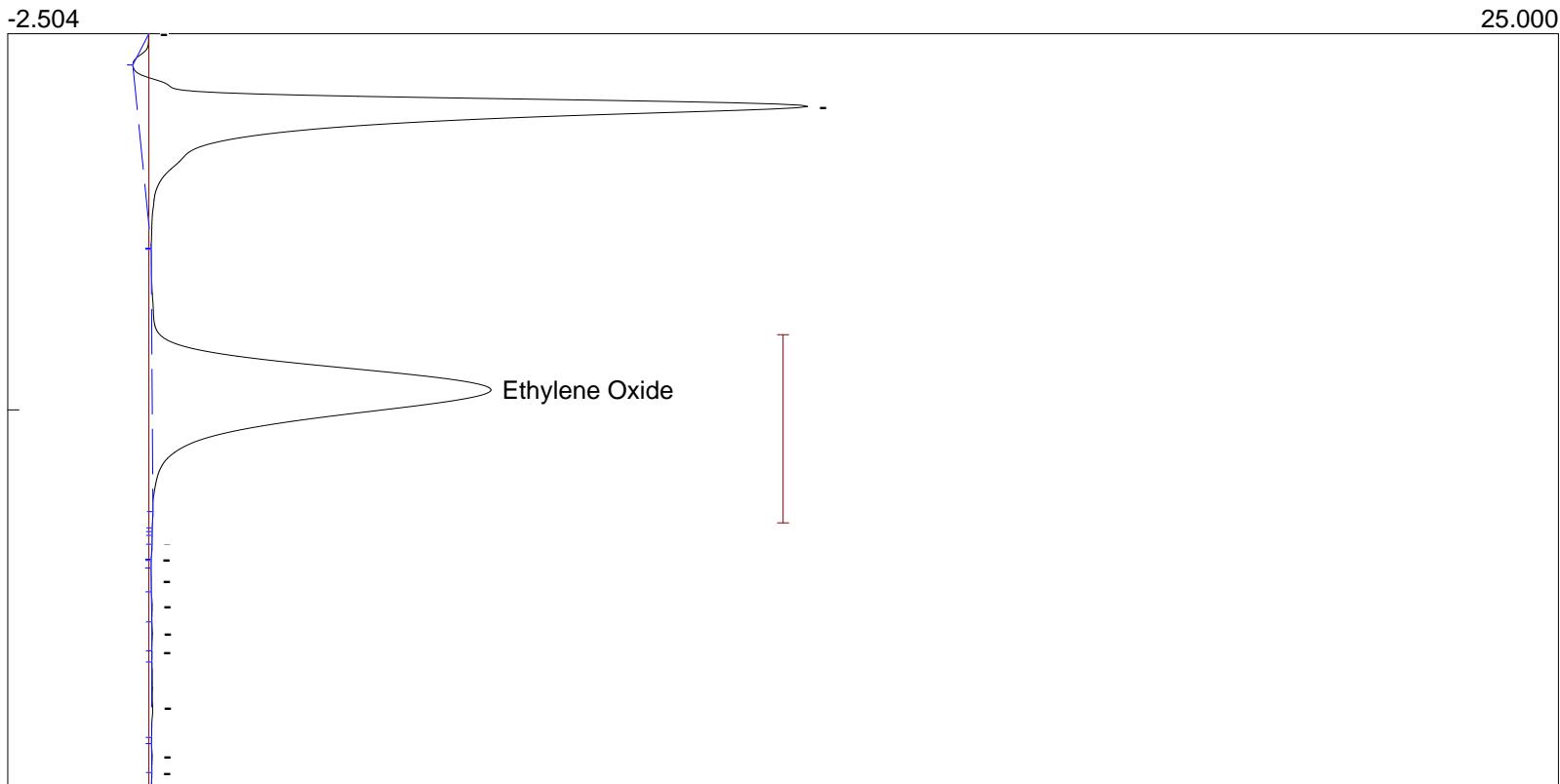
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_46.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	54.2334
1			54.2334

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:40:25

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

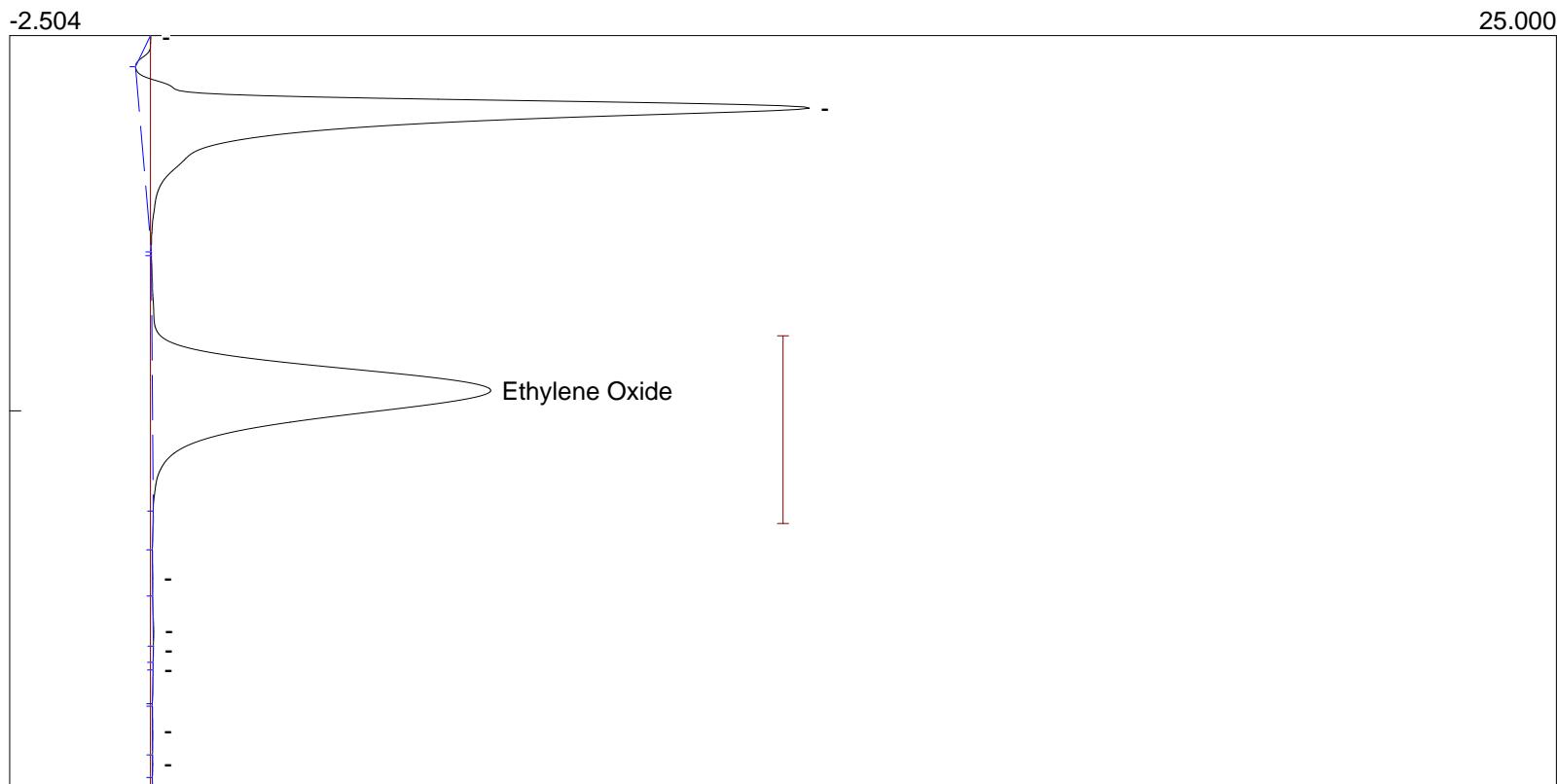
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_47.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	54.5774
1			54.5774

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:42:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

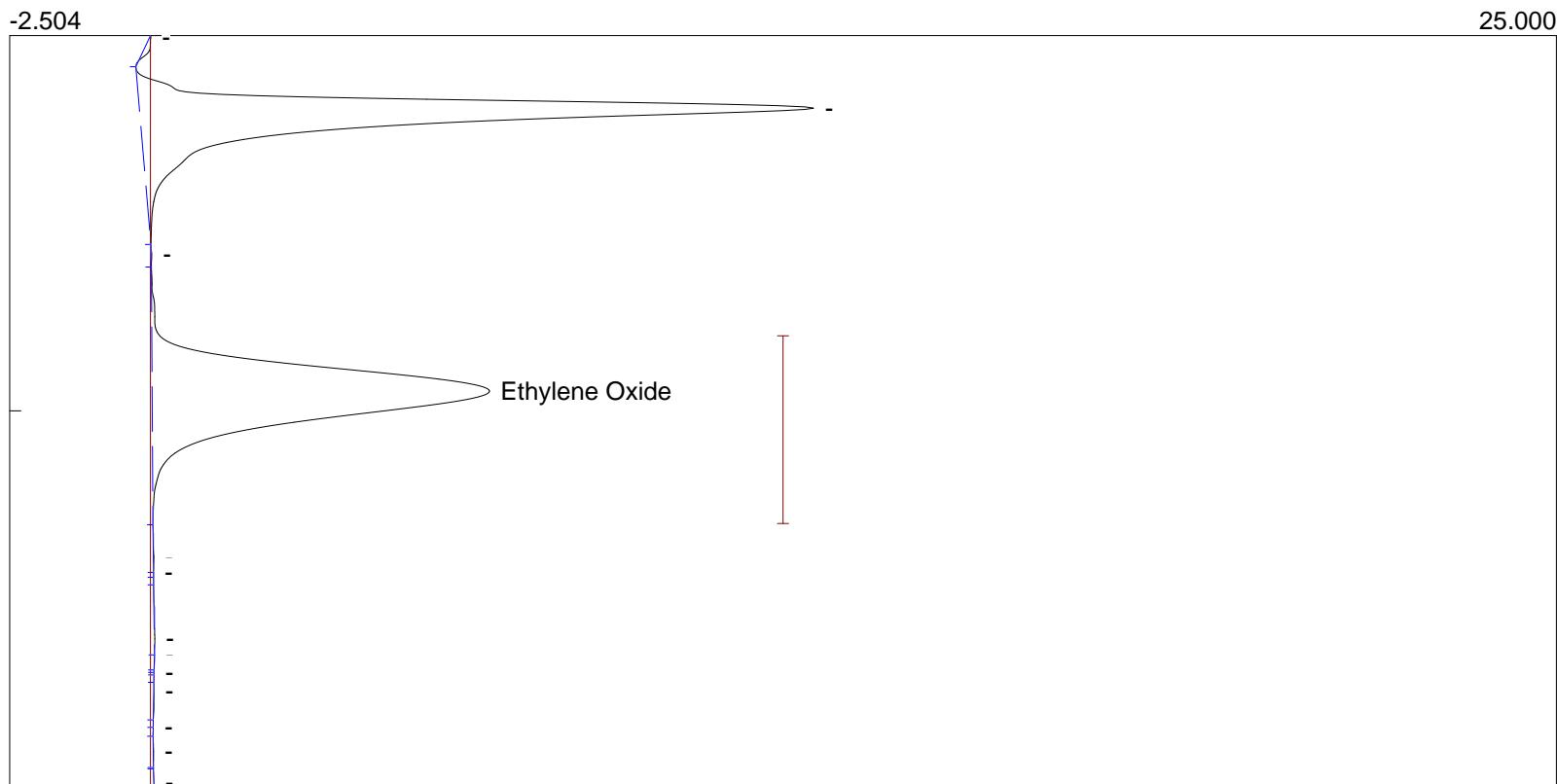
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_48.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	54.5678
1			54.5678

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:44:39

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

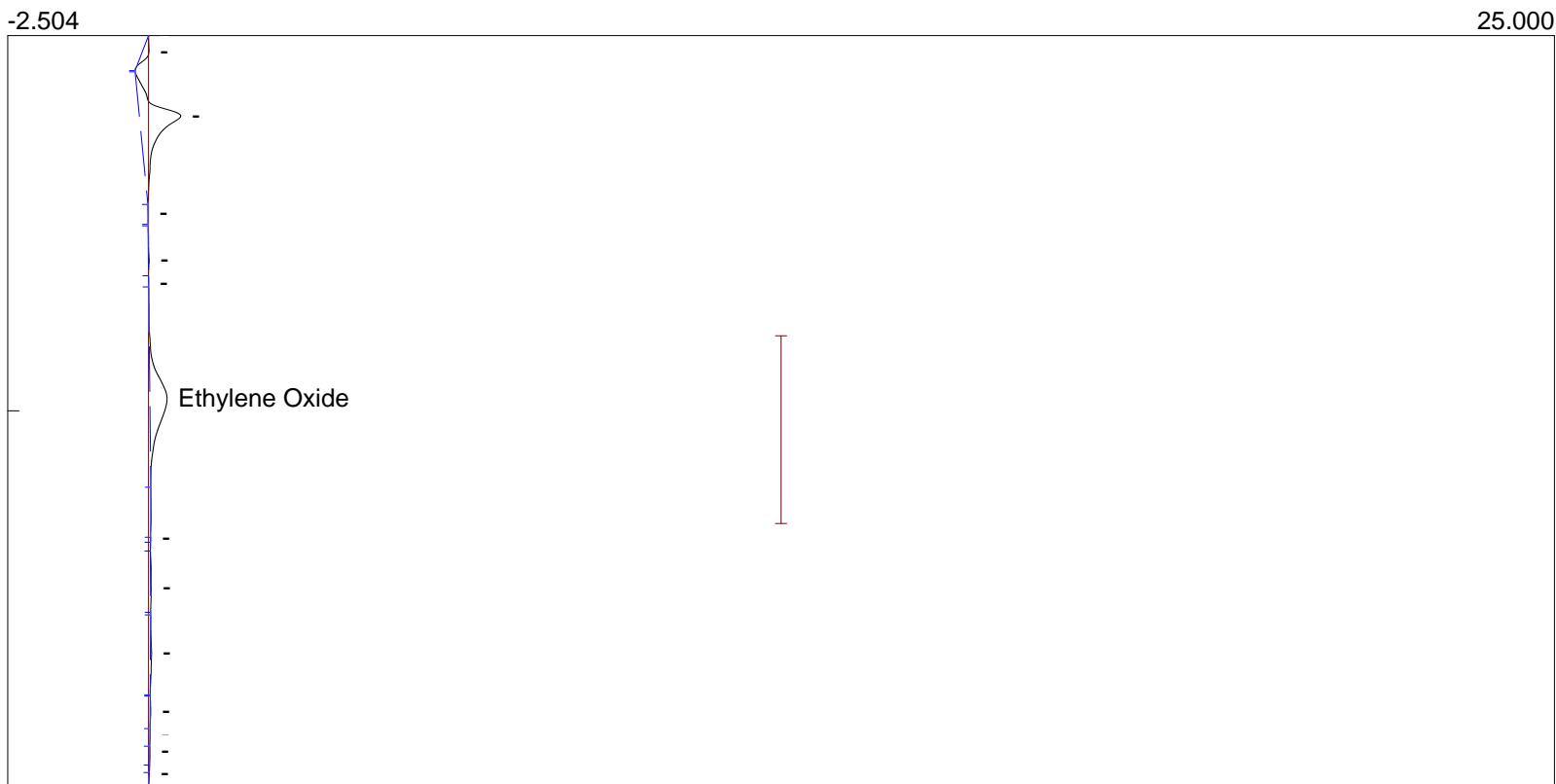
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_49.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.966	2.7844
1			2.7844

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:50:35

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

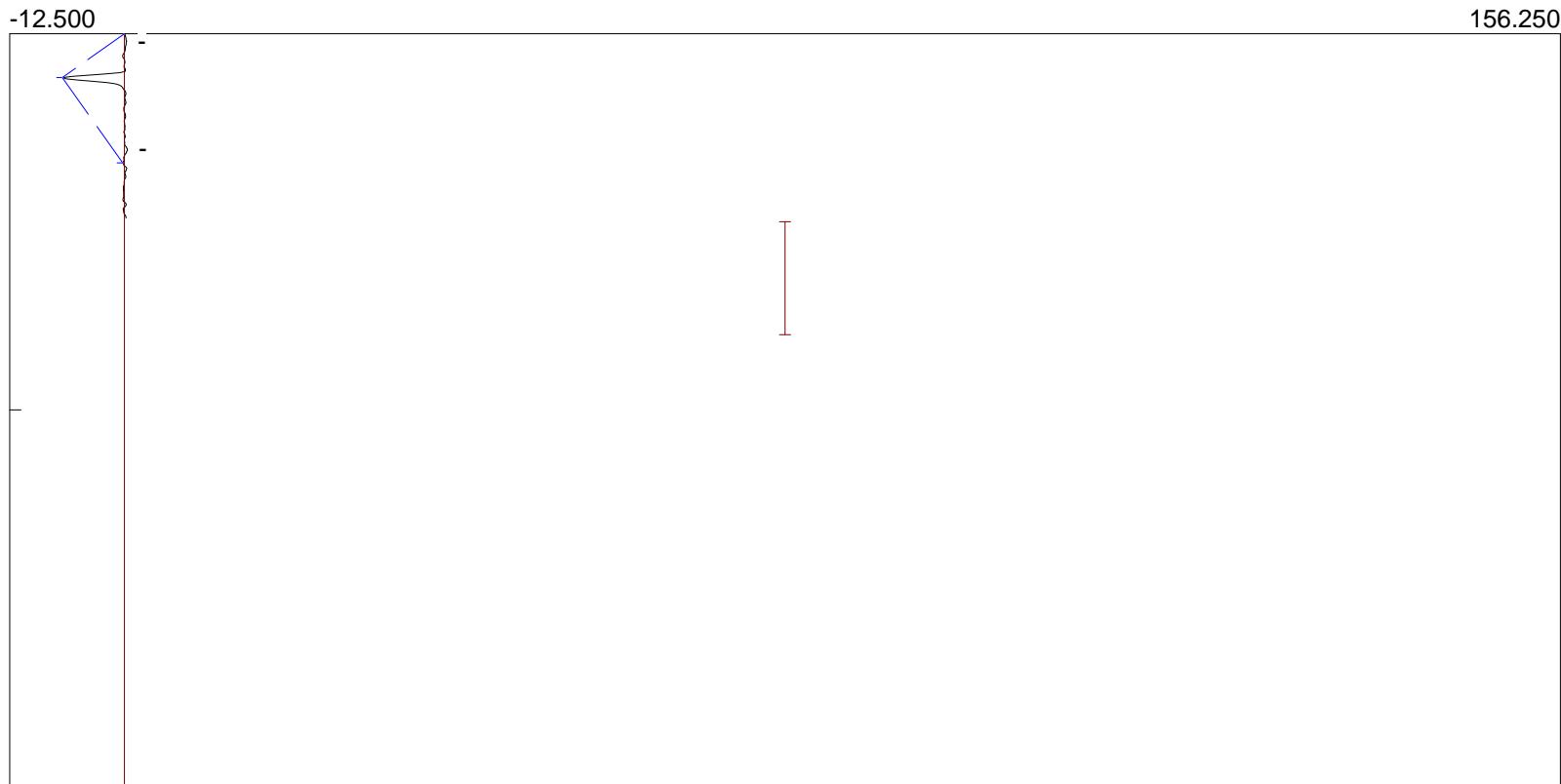
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_51.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
1	Ethylene Oxide	0.000	0.0000
0			0.0000

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:50:35

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

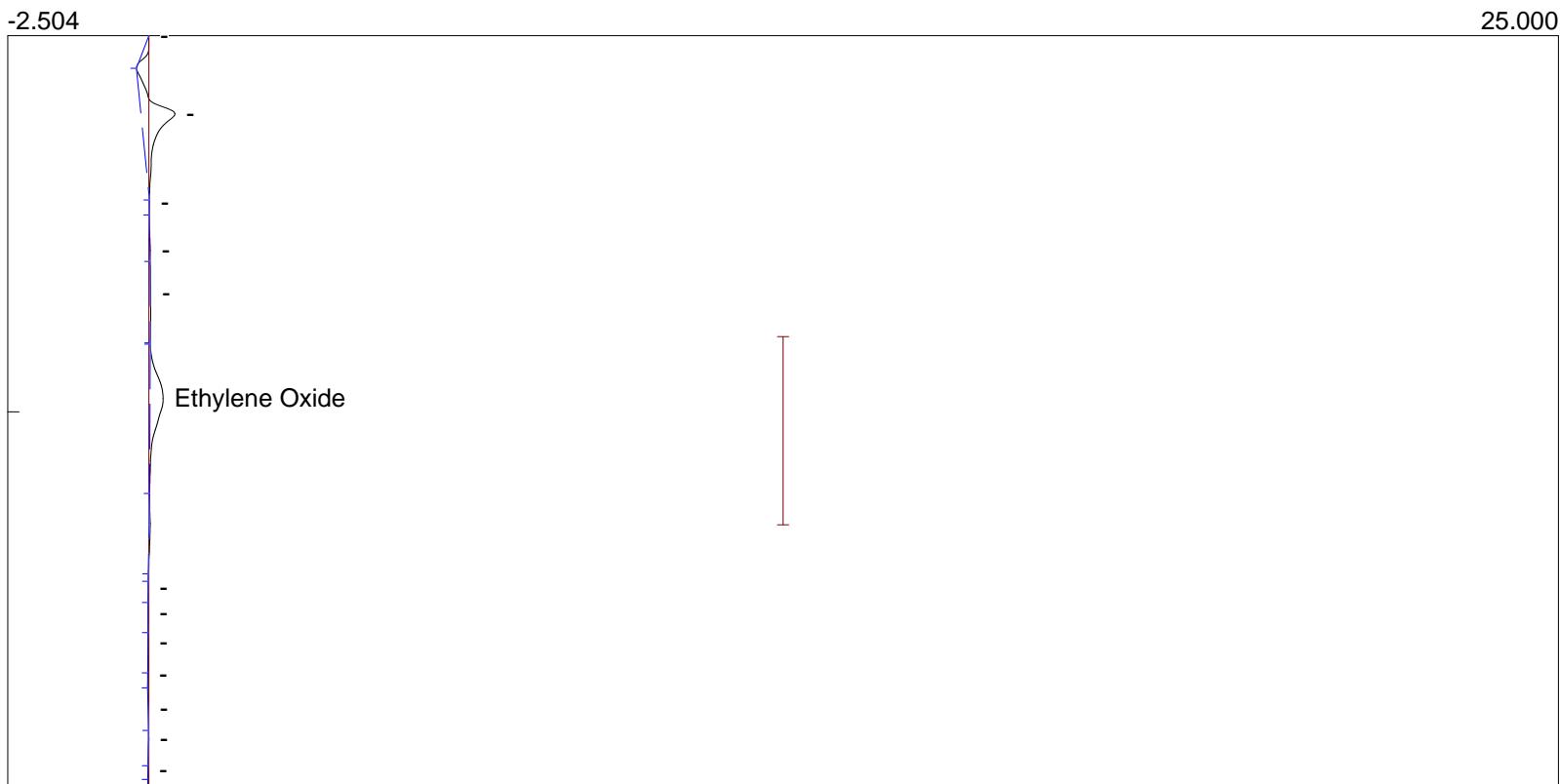
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_51.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.963	2.0519
1			2.0519

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:52:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_52.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:52:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

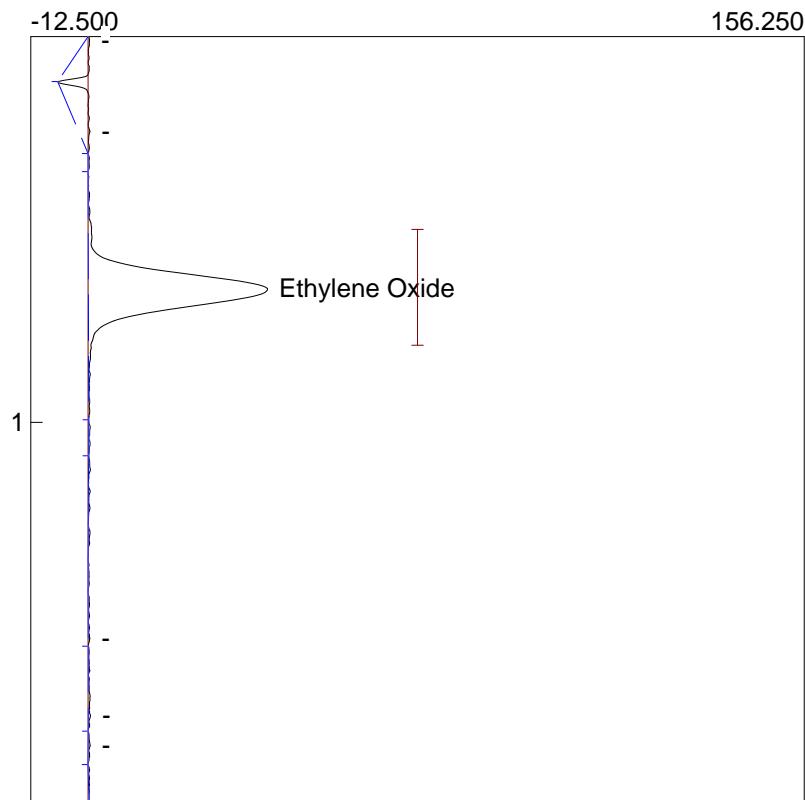
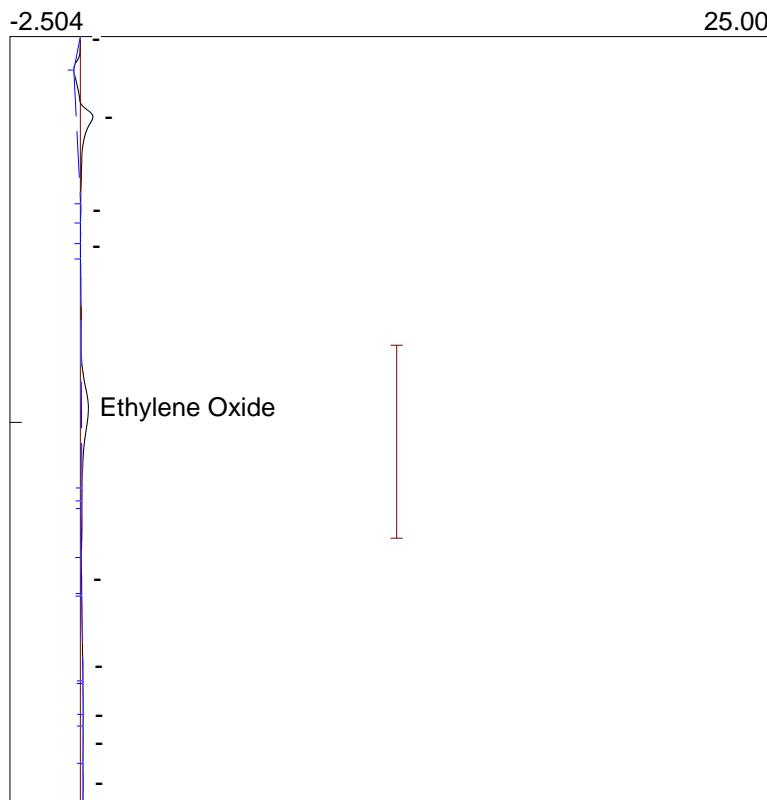
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_52.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.960	2.3024
1			2.3024

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	237.9989
1			237.9989

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:55:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_53.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Direct Interface Recovery Study

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:55:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

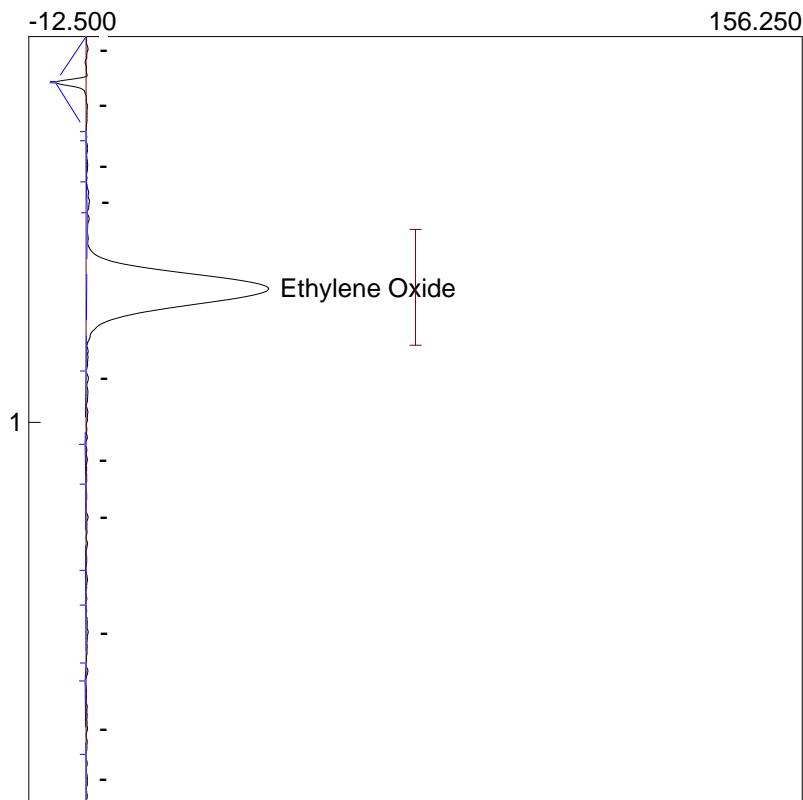
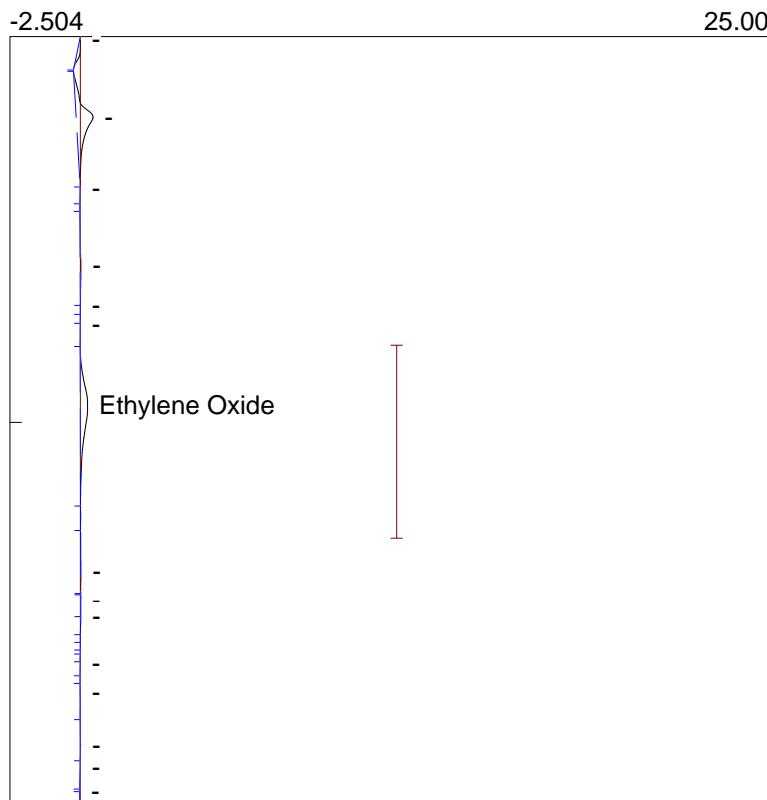
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_53.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.956	2.4642
1			2.4642

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	231.0709
1			231.0709

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:58:20

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_54.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments:

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 12:58:20

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

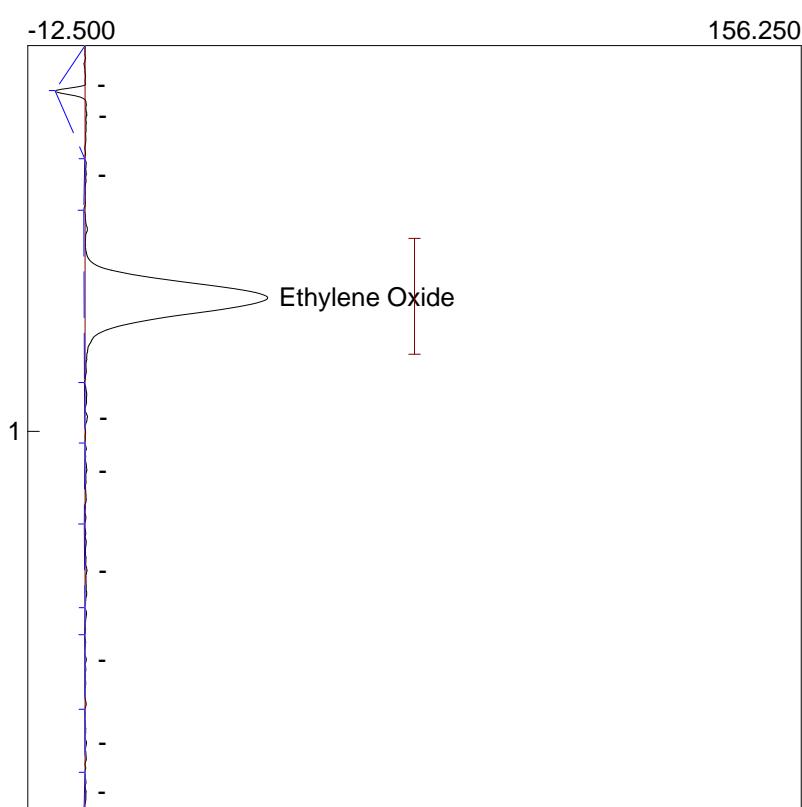
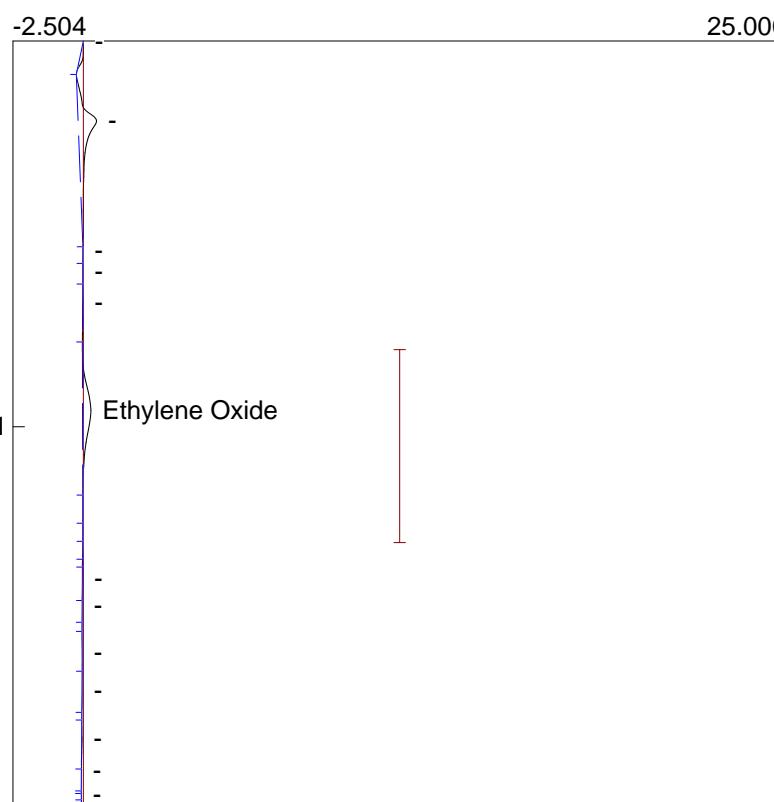
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_54.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.956	2.6664
1			2.6664

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	237.5602
1			237.5602

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:00:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_55.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments:

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:00:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

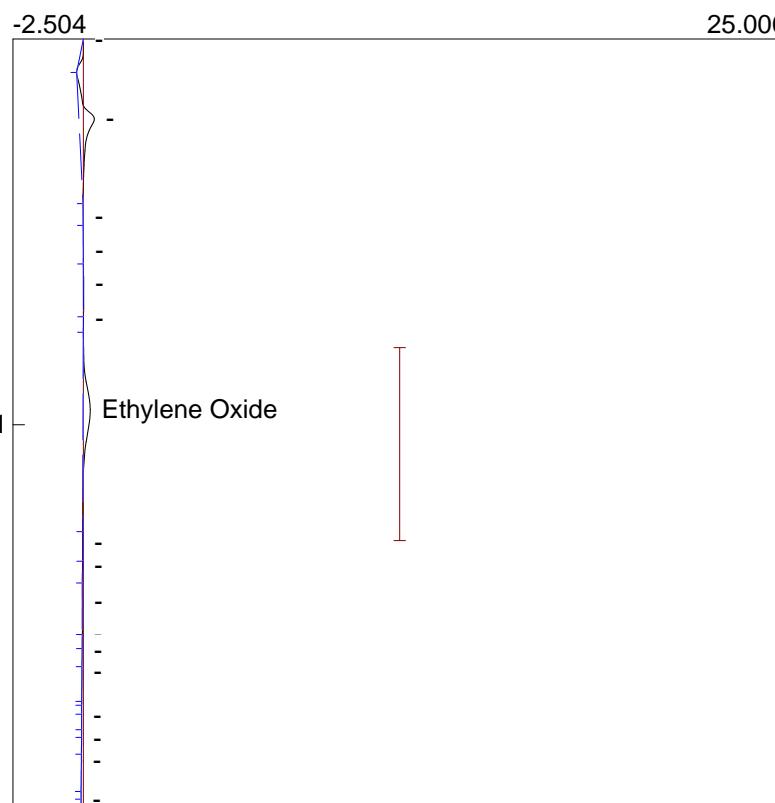
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_55.()

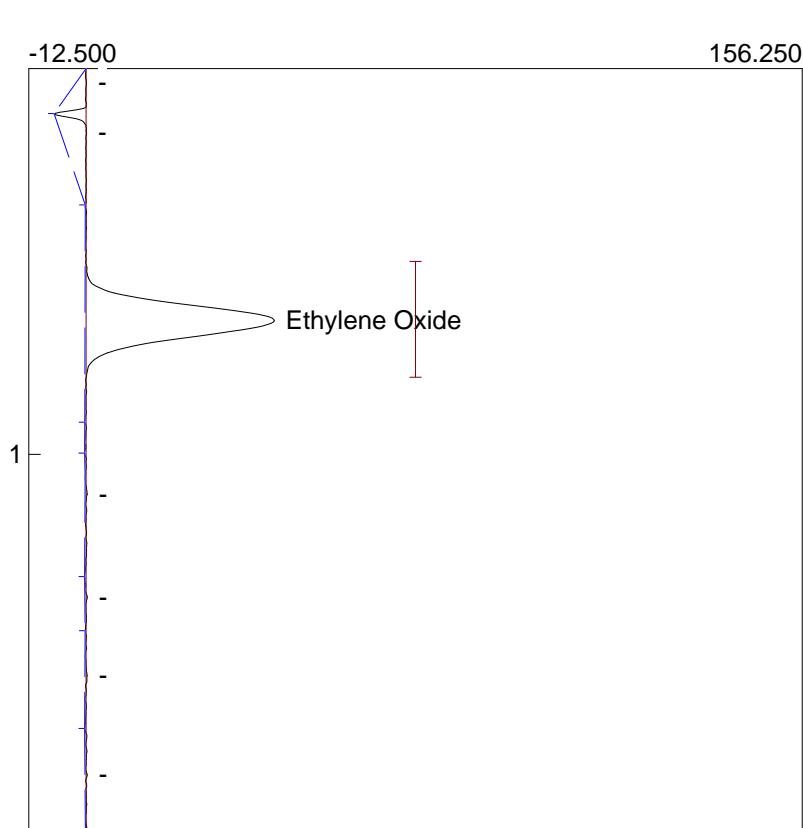
Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.960	2.4130
1			2.4130



Number	Component	Retention	Area
1	Ethylene Oxide	0.653	244.5209
1			244.5209

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:02:33

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_56.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments:

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:02:33

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

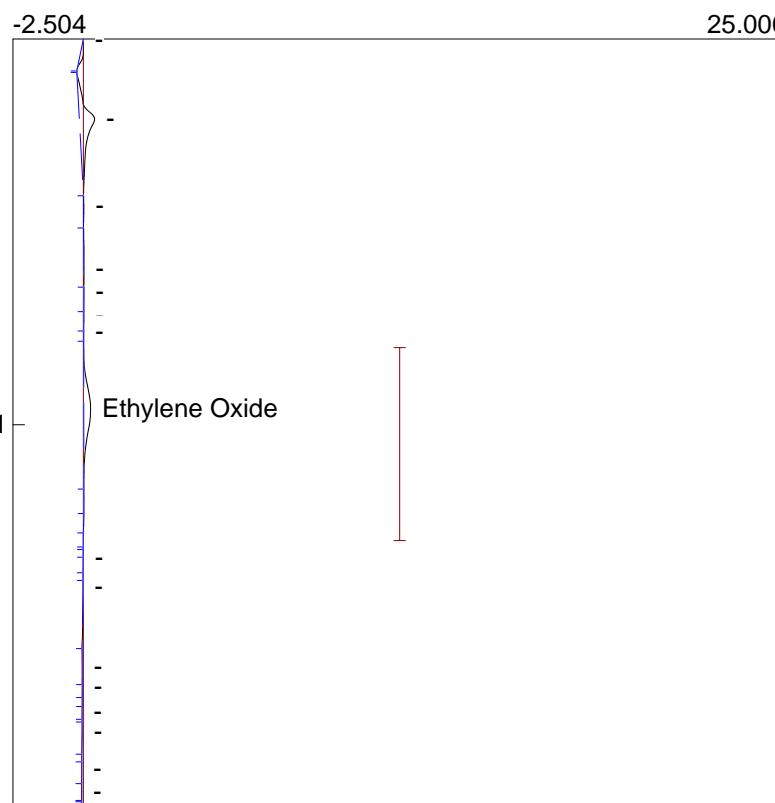
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_56.()

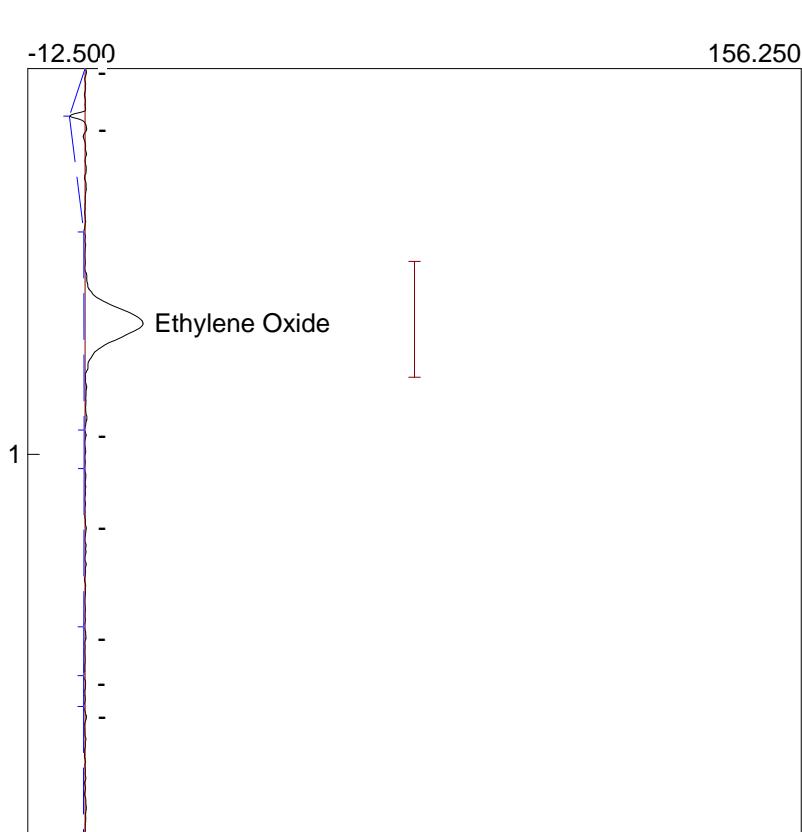
Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.956	2.1283
1			2.1283



Number	Component	Retention	Area
1	Ethylene Oxide	0.660	82.5696
1			82.5696

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:04:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_57.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:04:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

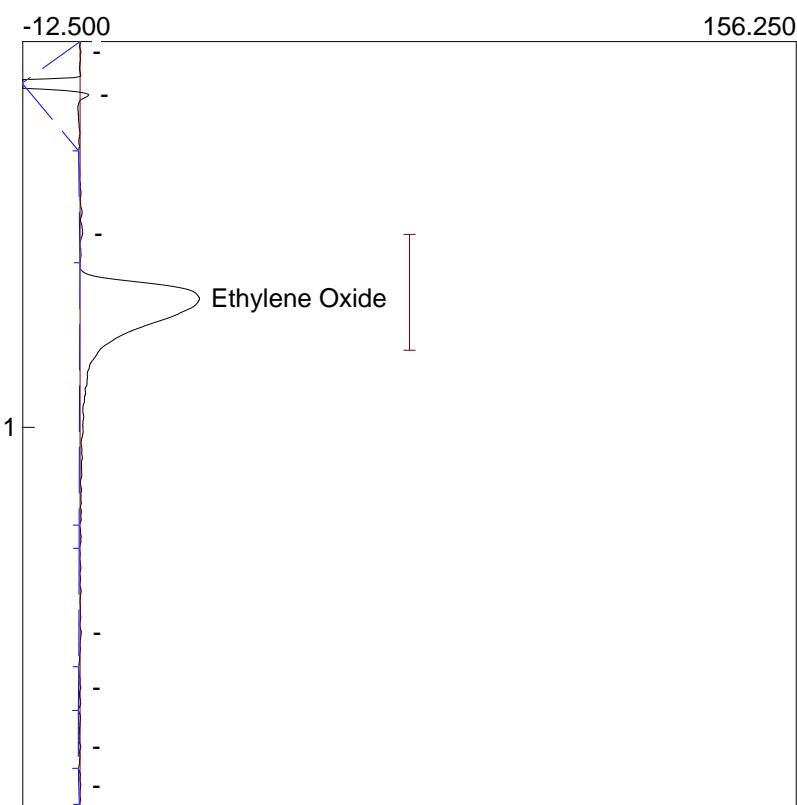
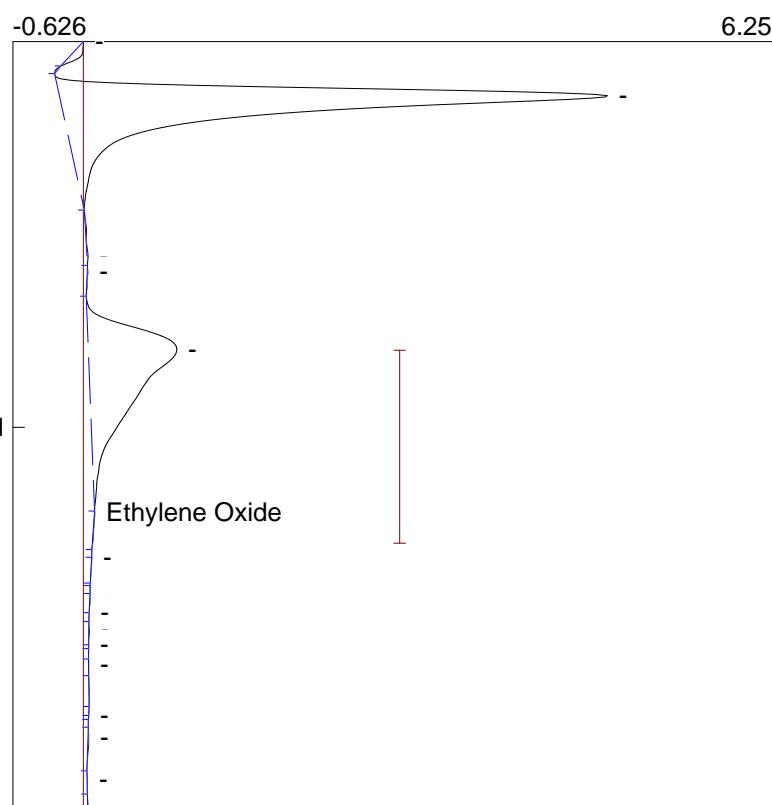
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_57.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	1.220	0.0216
1			0.0216

Number	Component	Retention	Area
1	Ethylene Oxide	0.666	216.3726
1			216.3726

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:09:07

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_59.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:09:07

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

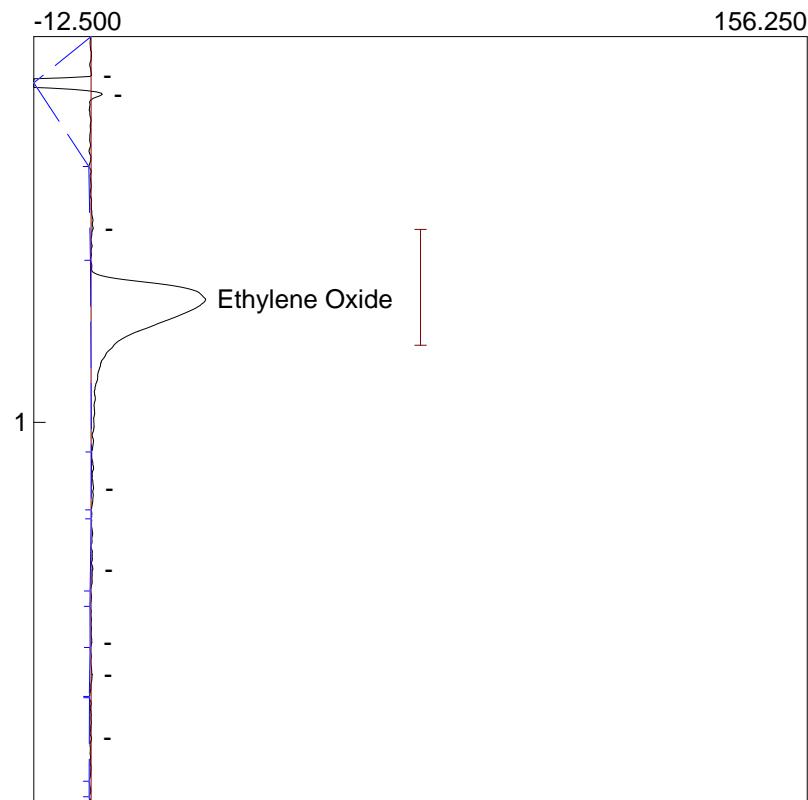
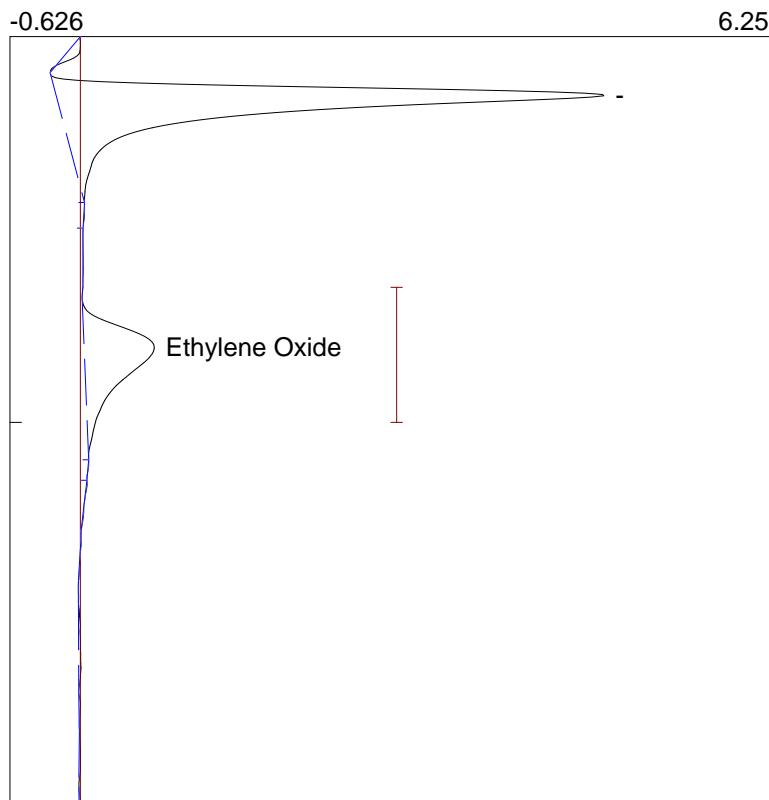
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_59.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Direct Interface Recovery Study



Number	Component	Retention	Area
0	Ethylene Oxide	0.806	5.9922
1			5.9922

Number	Component	Retention	Area
1	Ethylene Oxide	0.680	194.9623
1			194.9623

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:42:49

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_75.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:42:49

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

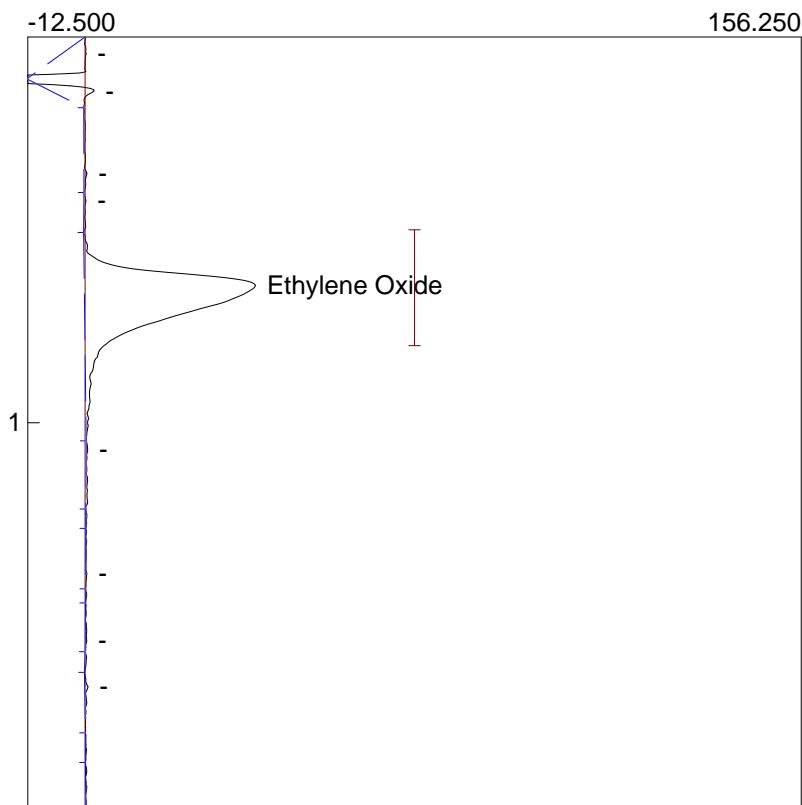
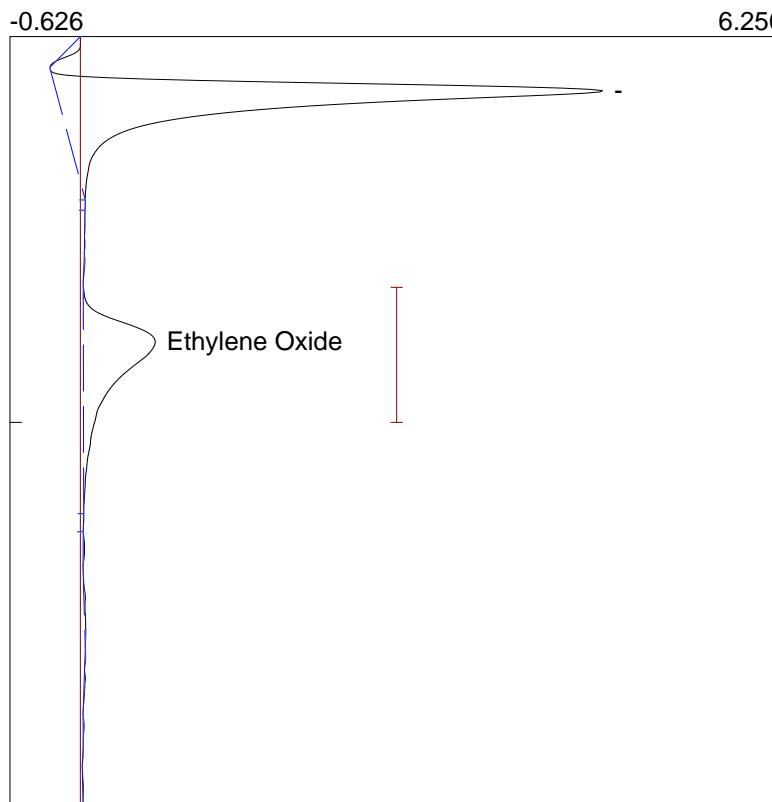
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_75.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.790	6.7104
1			6.7104

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	292.6940
1			292.6940

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:46:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_76.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:46:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

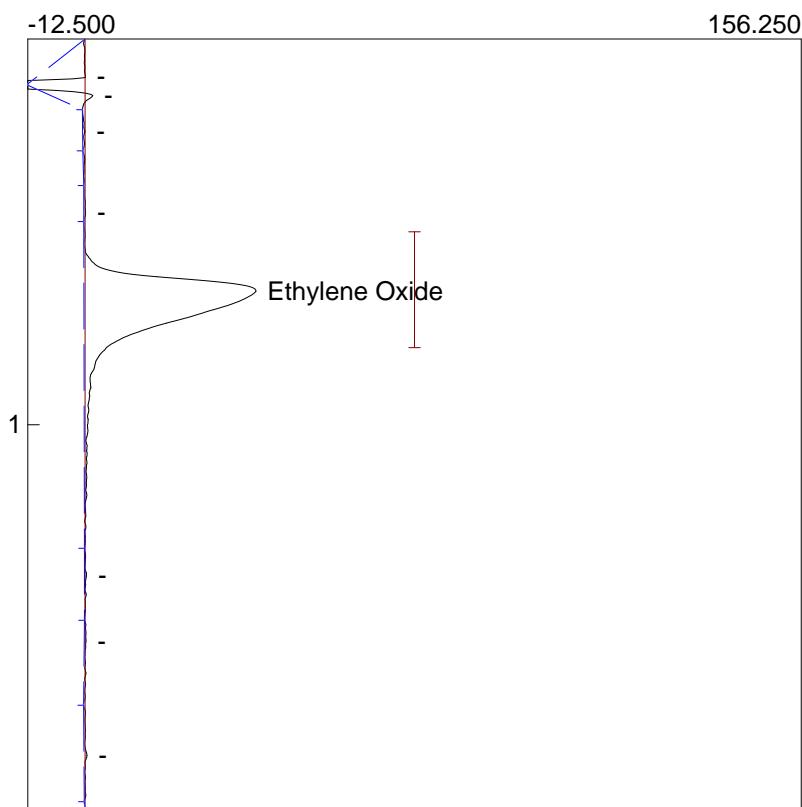
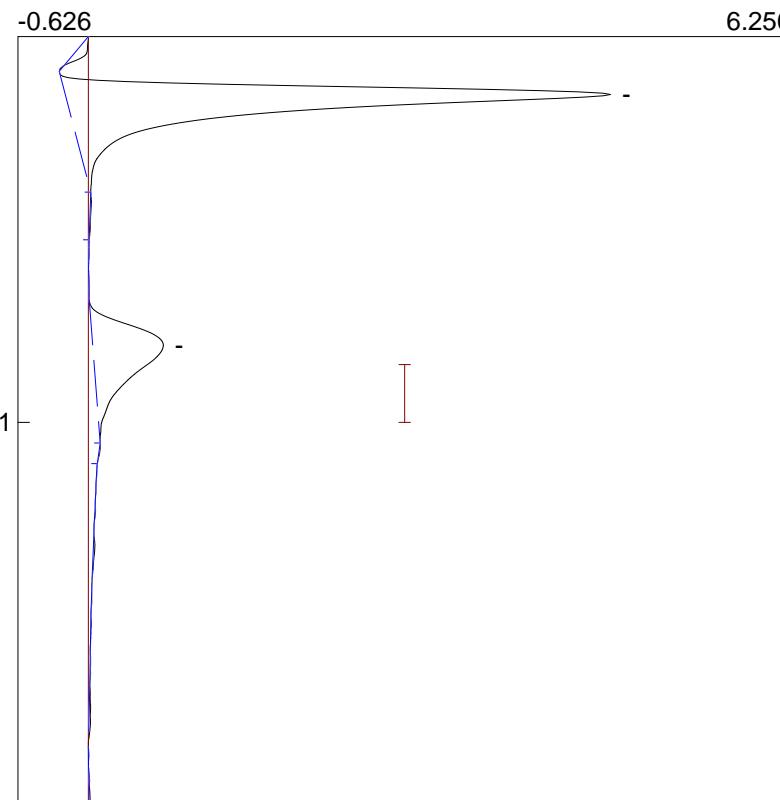
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_76.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	299.0728
1			299.0728

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:49:46

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_77.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:49:46

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

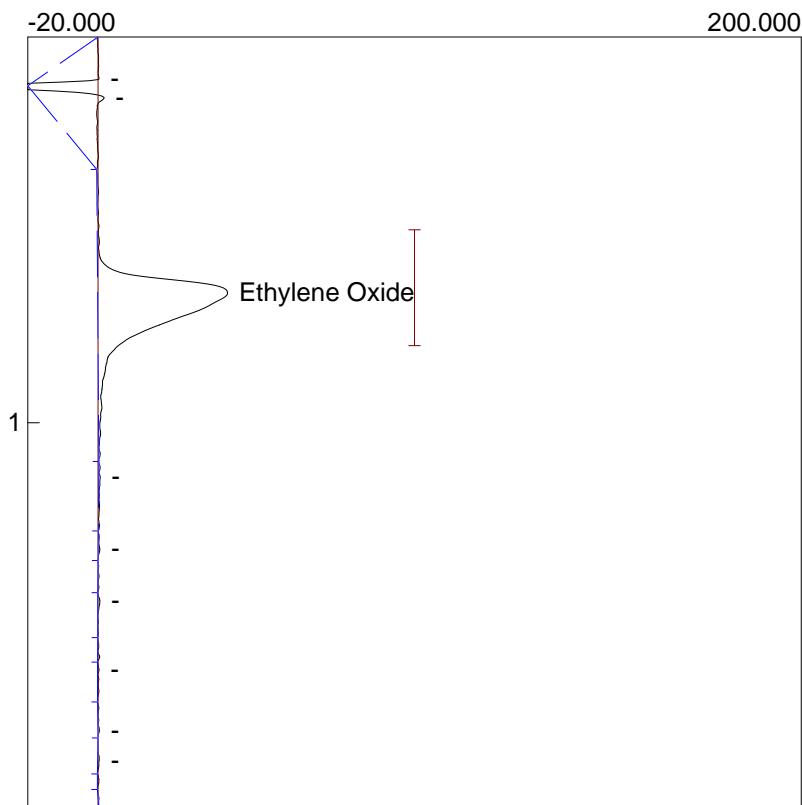
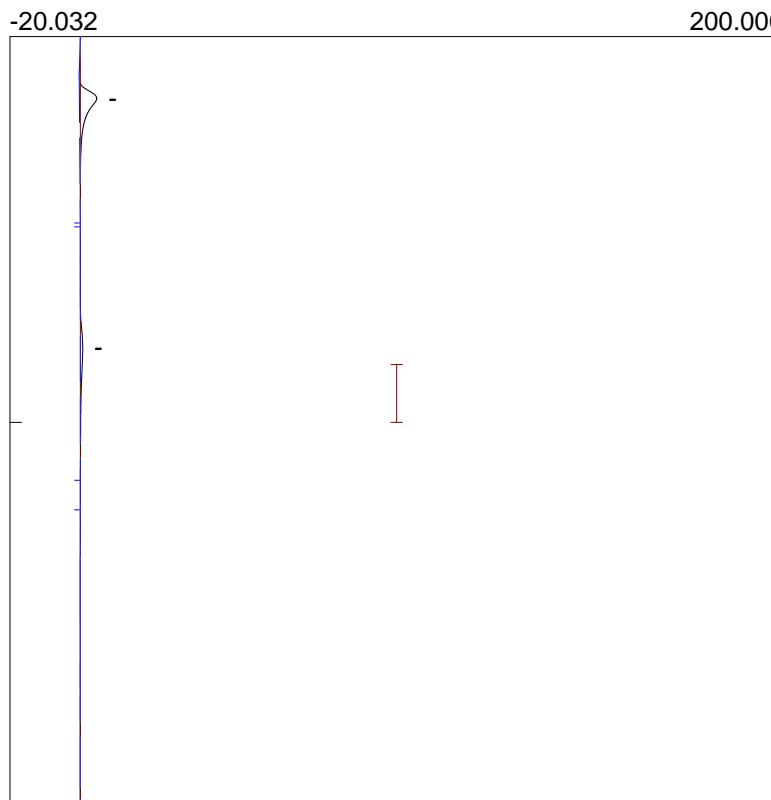
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_77.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.663	292.4740
1			292.4740

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:52:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_78.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:52:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

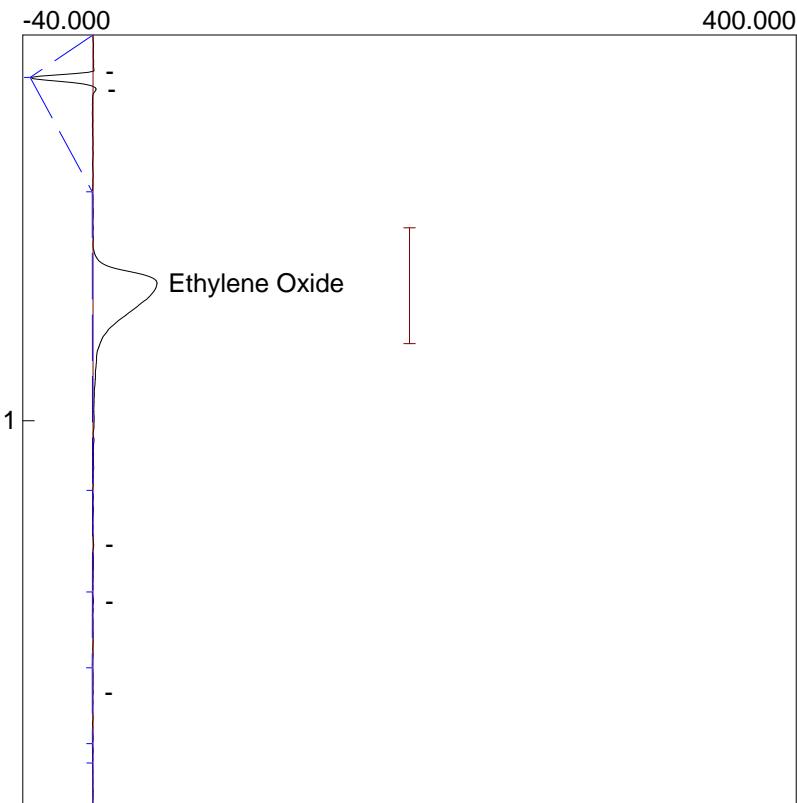
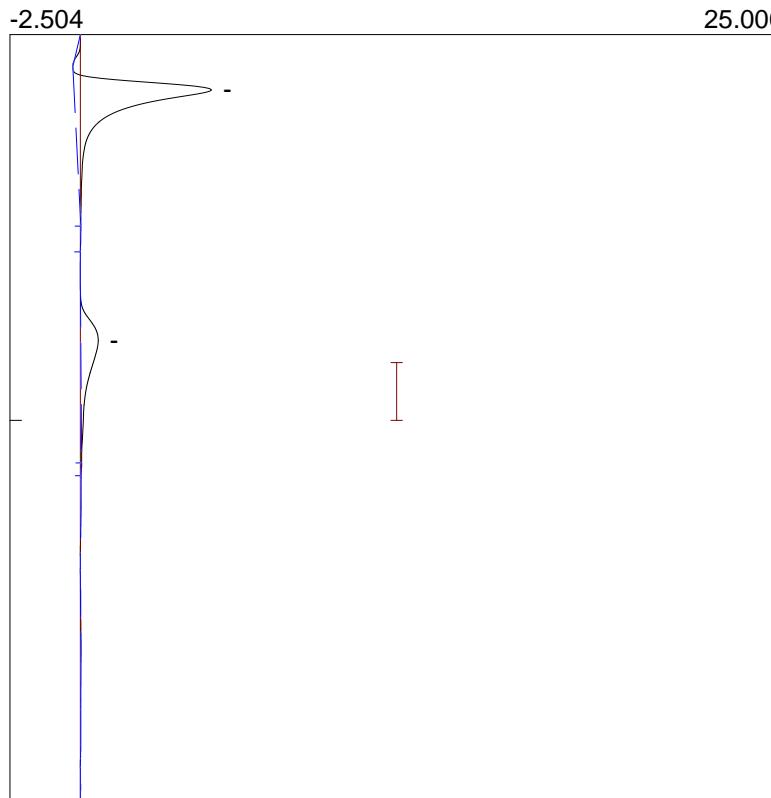
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_78.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments:



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	300.7570
1			300.7570

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:54:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_79.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:54:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

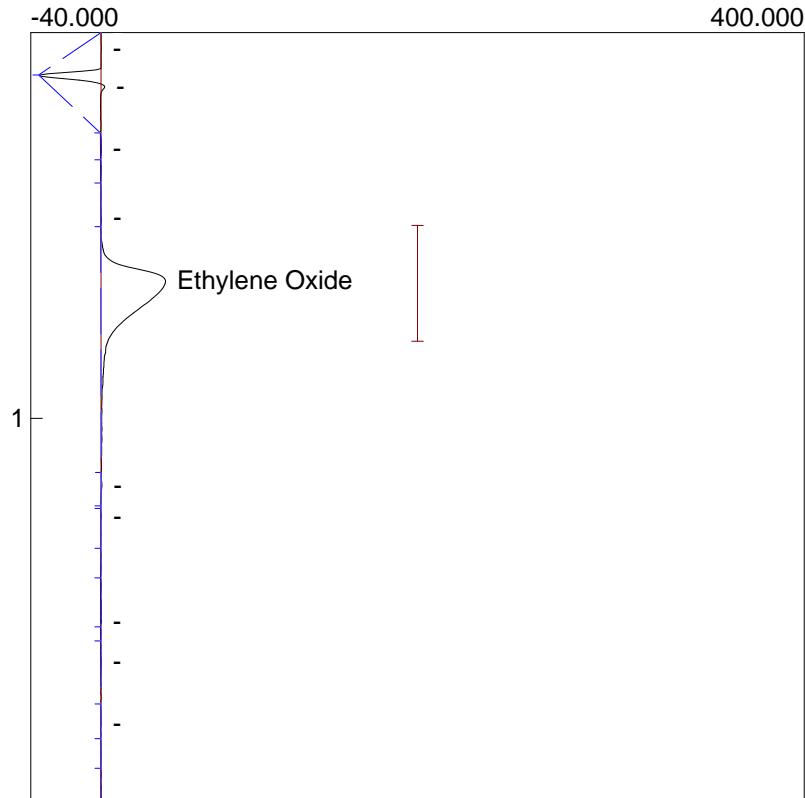
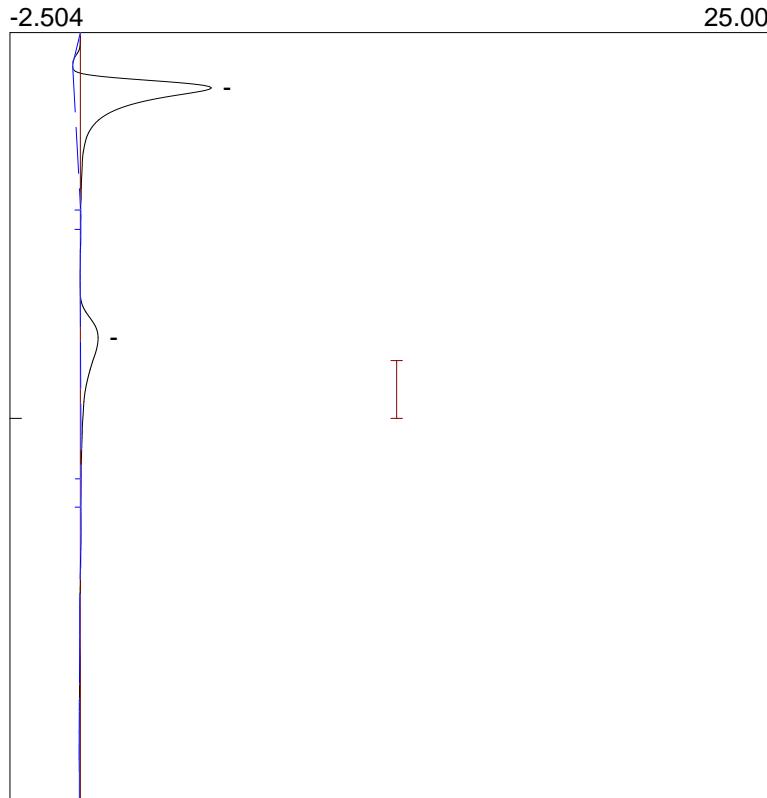
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_79.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	289.4230
1			289.4230

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:57:34

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_80.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 13:57:34

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

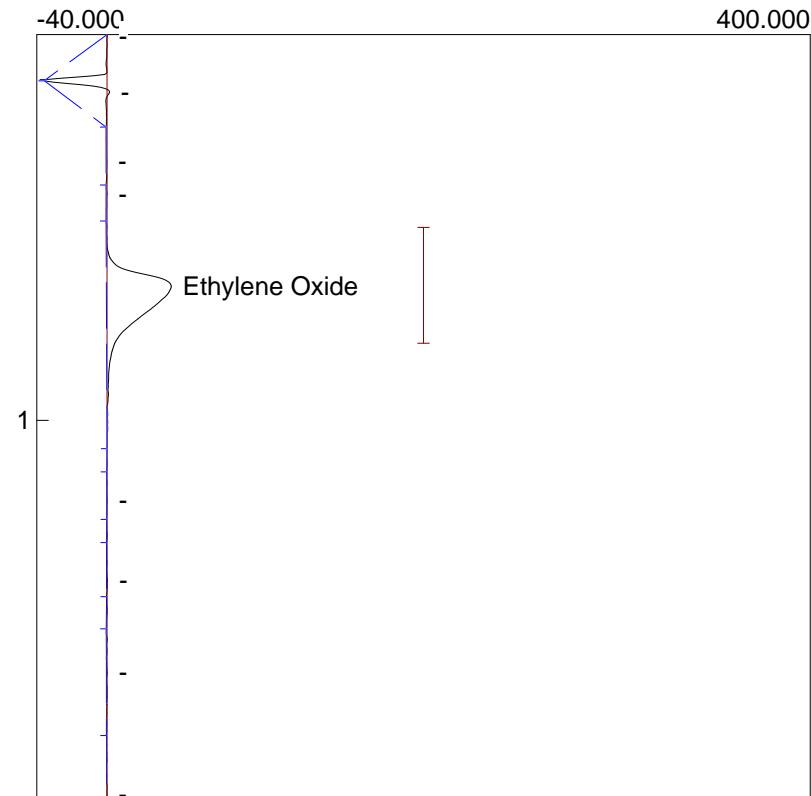
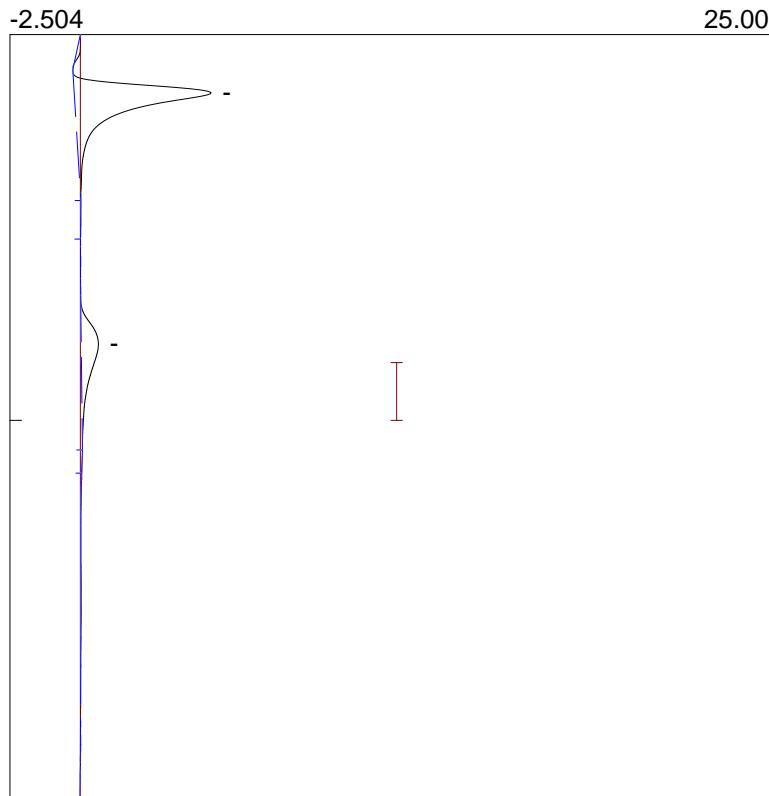
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_80.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	289.4943
1			289.4943

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:00:10

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_81.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:00:10

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

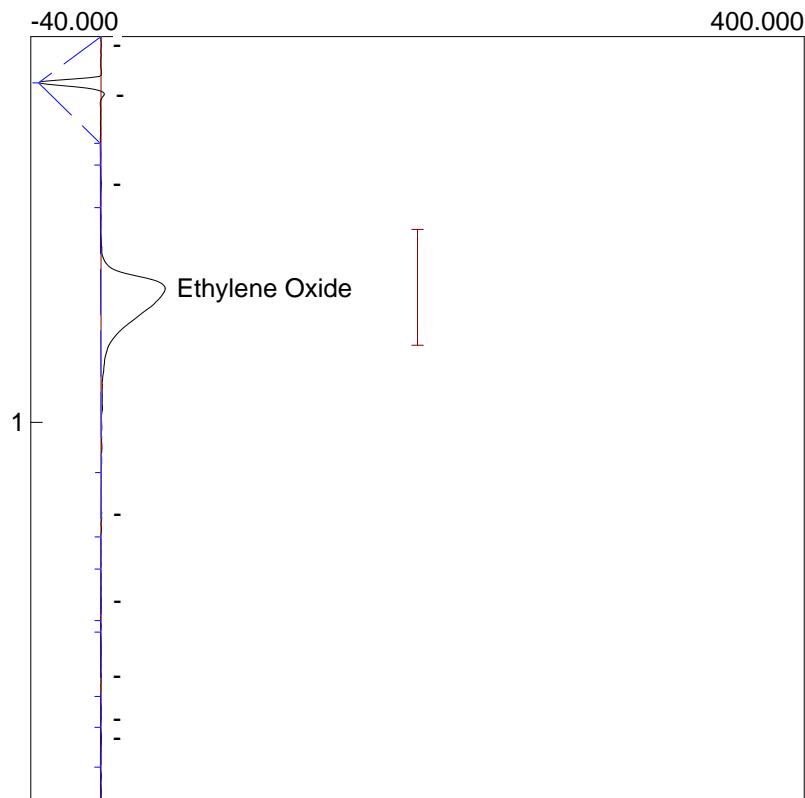
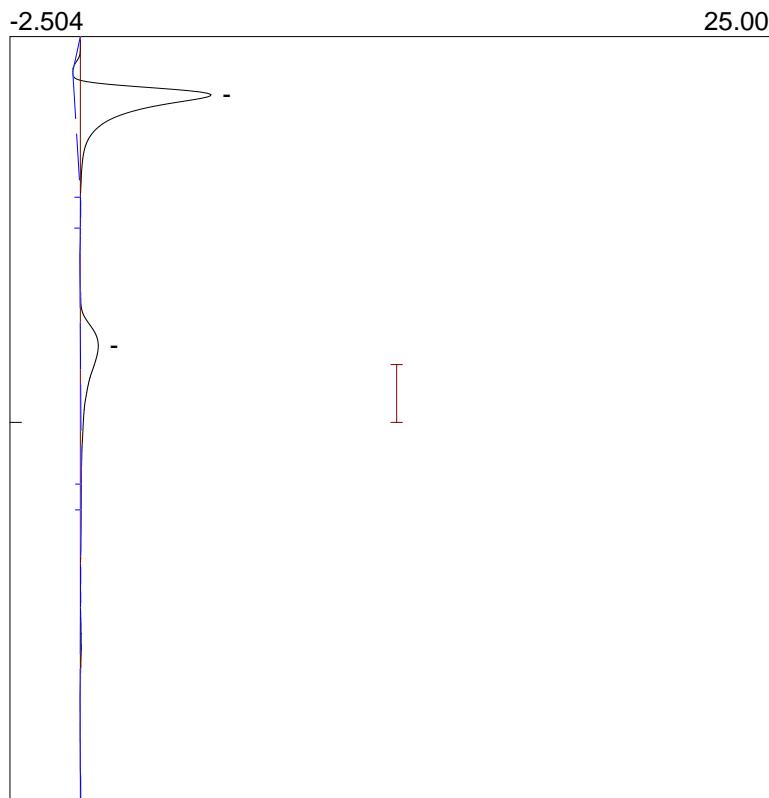
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_81.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	288.6200
1			288.6200

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:02:55

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_82.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:02:55

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

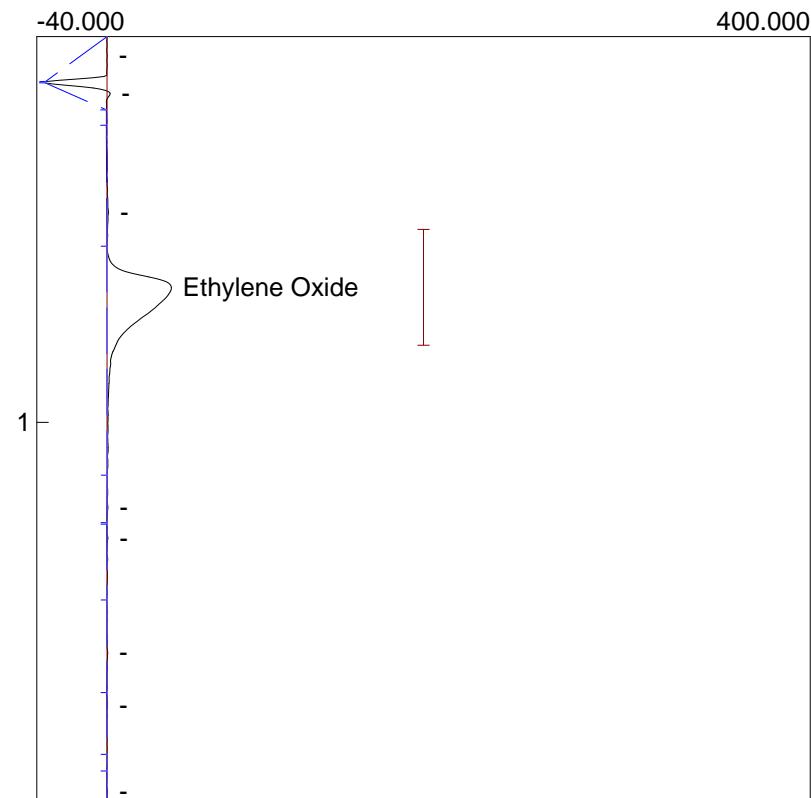
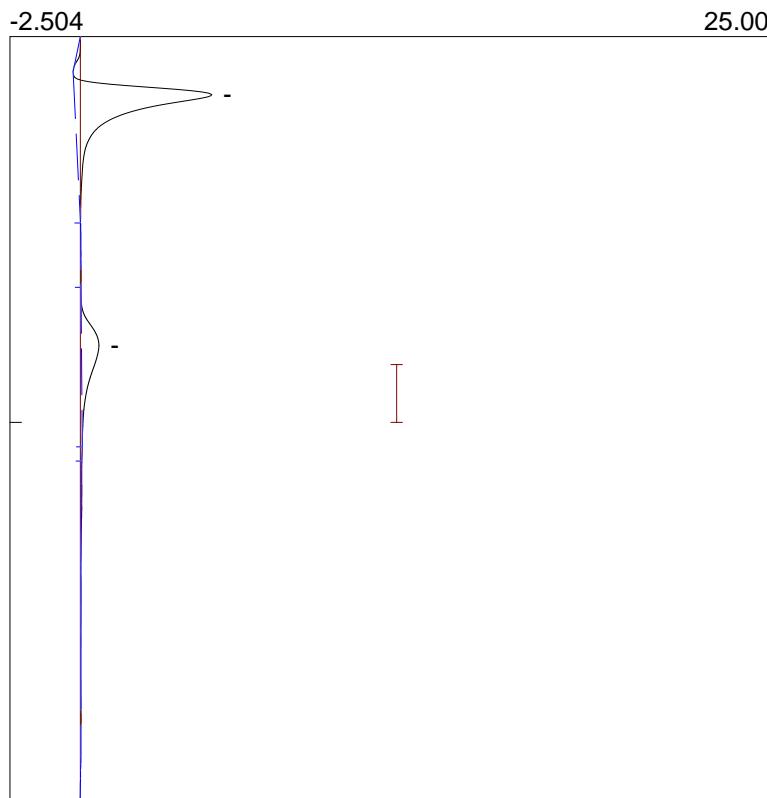
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_82.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.650	286.7702
1			286.7702

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:05:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_83.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:05:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

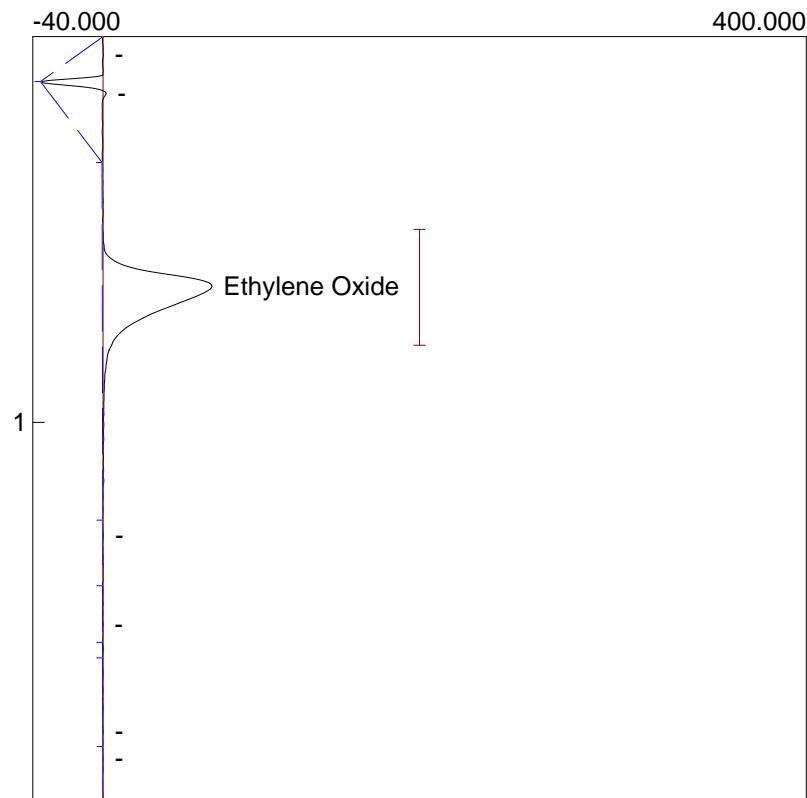
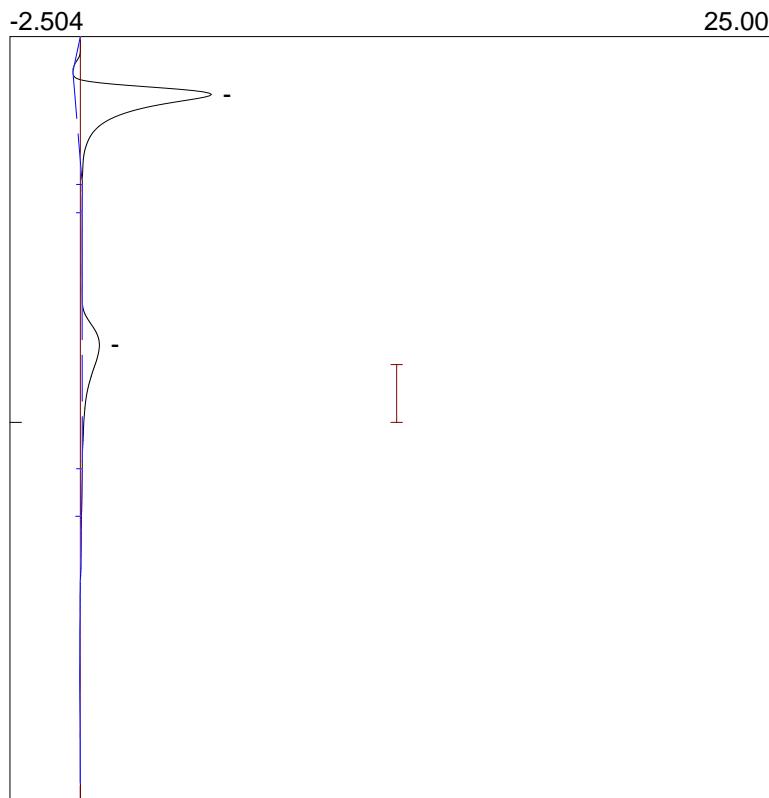
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_83.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	447.0712
1			447.0712

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:08:24

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_84.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:08:24

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

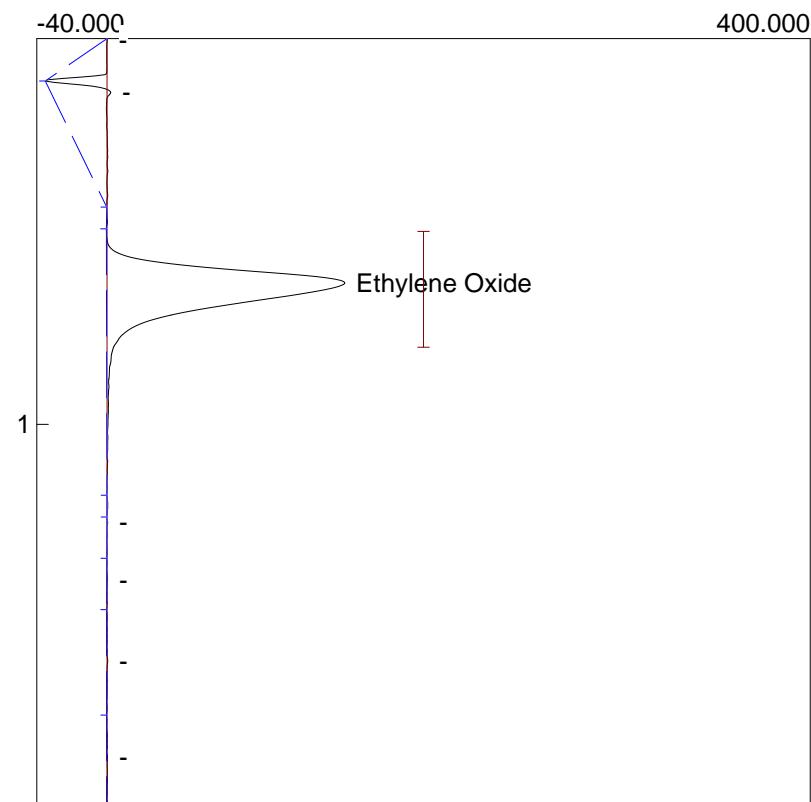
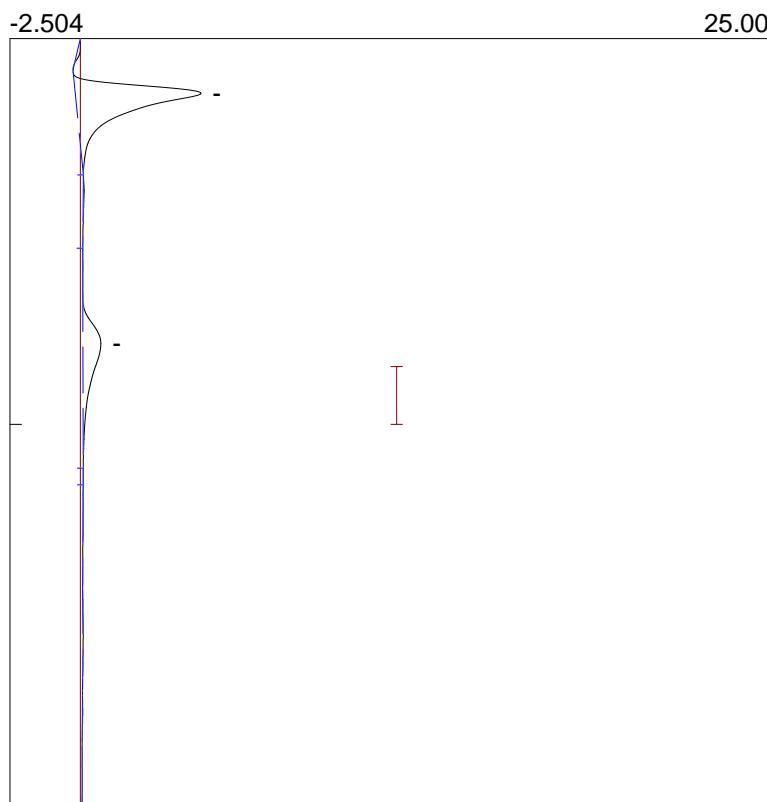
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_84.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	861.3931
1			861.3931

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:11:00

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_85.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:11:00

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

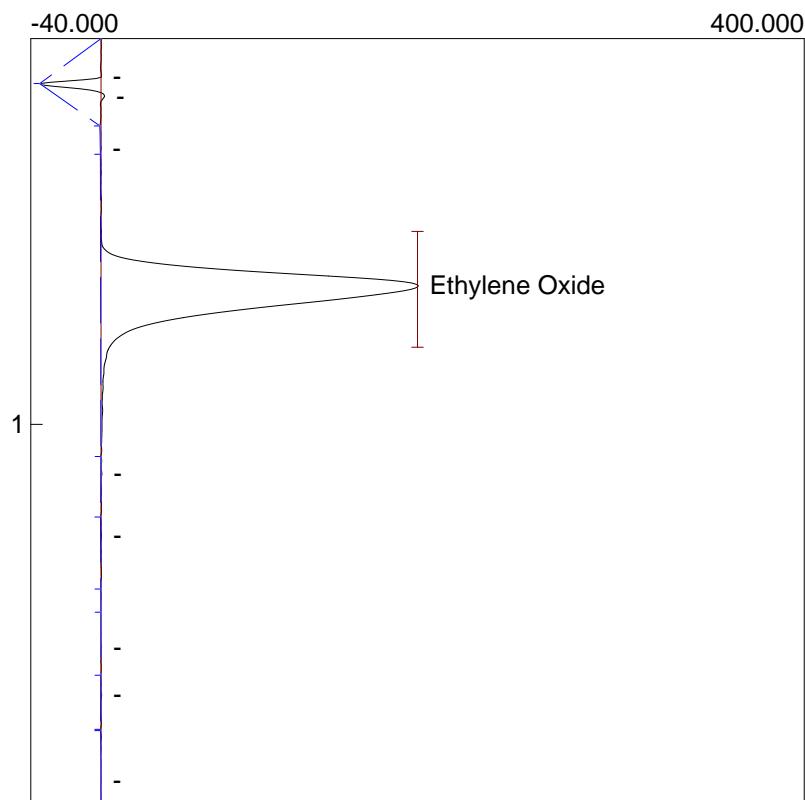
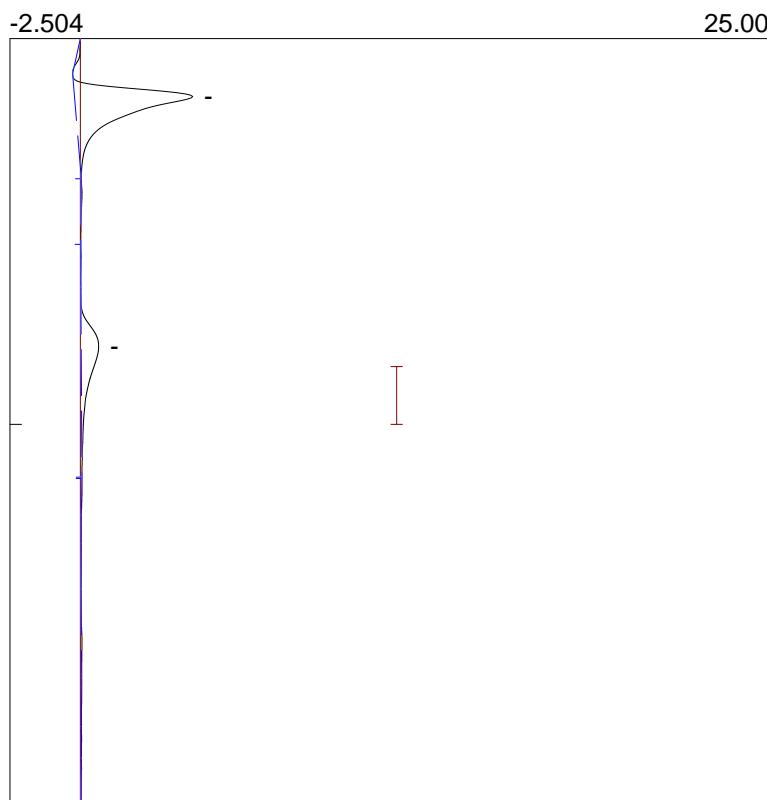
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_85.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	1127.4537
1			1127.4537

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:13:36

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_86.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:13:36

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

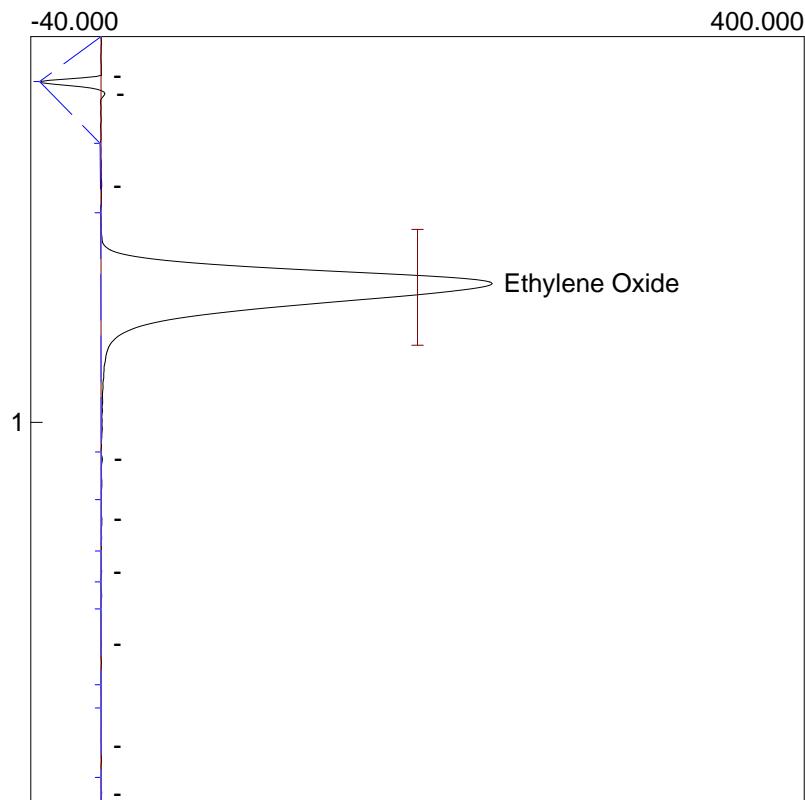
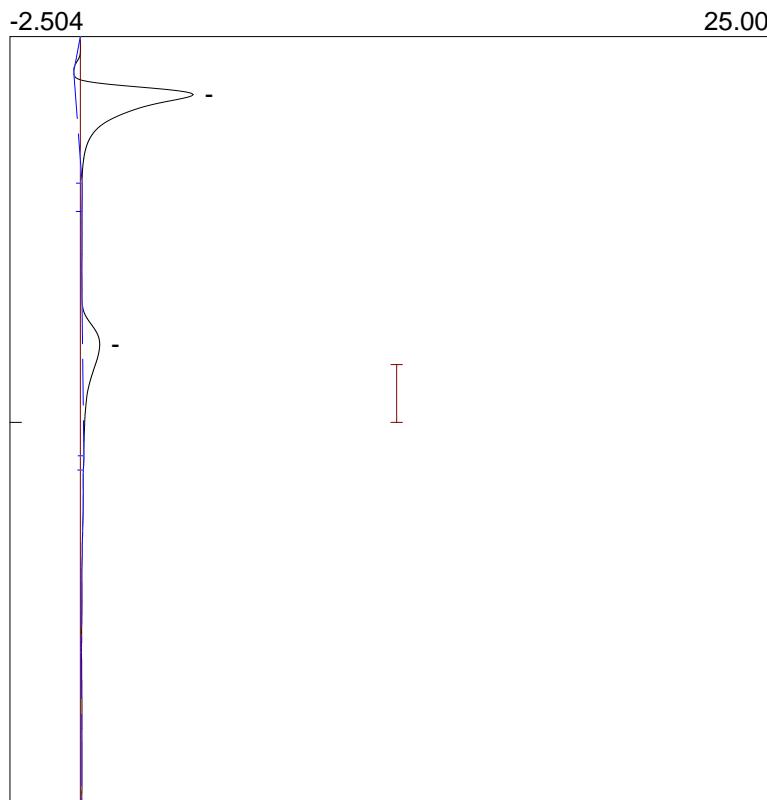
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_86.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	1374.8146
1			1374.8146

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:16:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_87.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:16:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

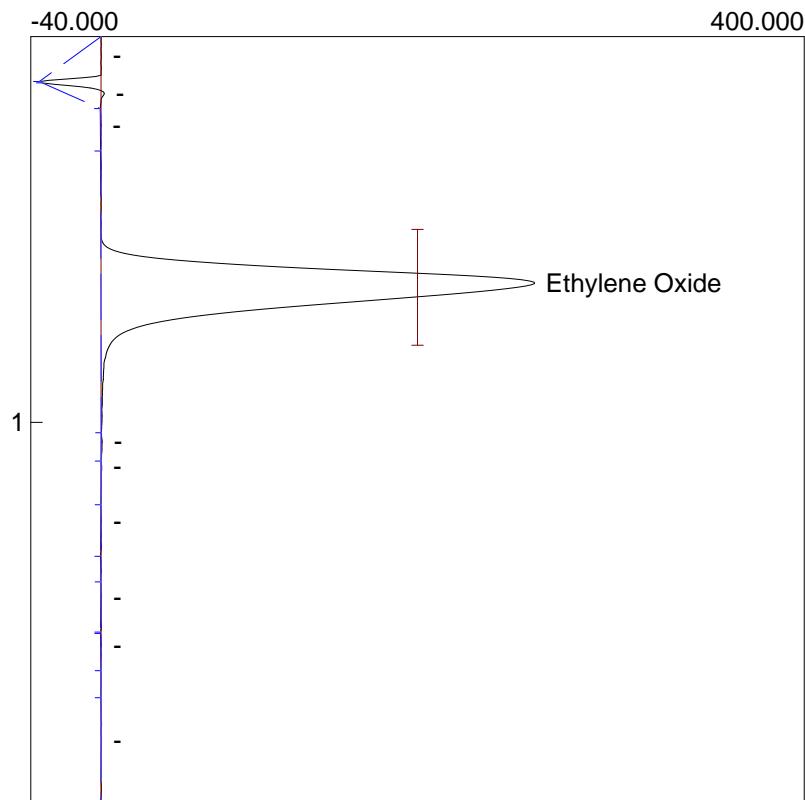
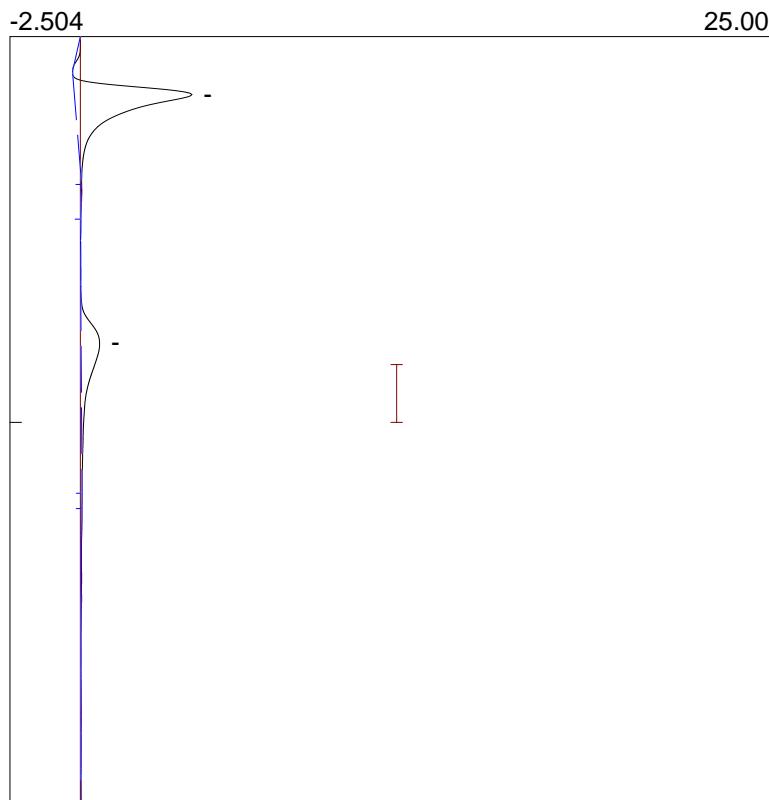
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_87.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	1511.0423
1			1511.0423

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:18:55

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_88.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:18:55

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

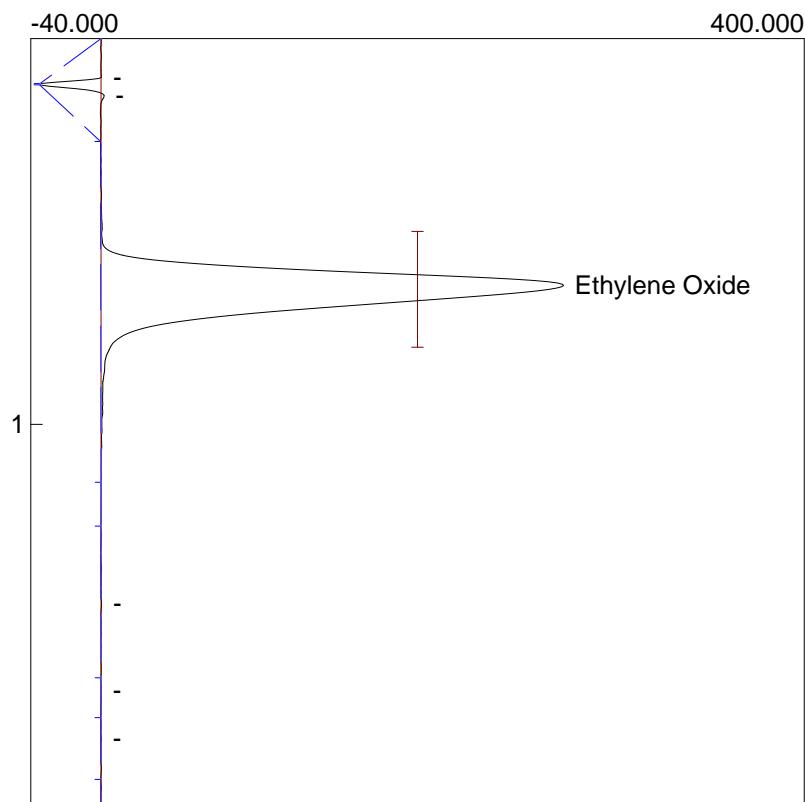
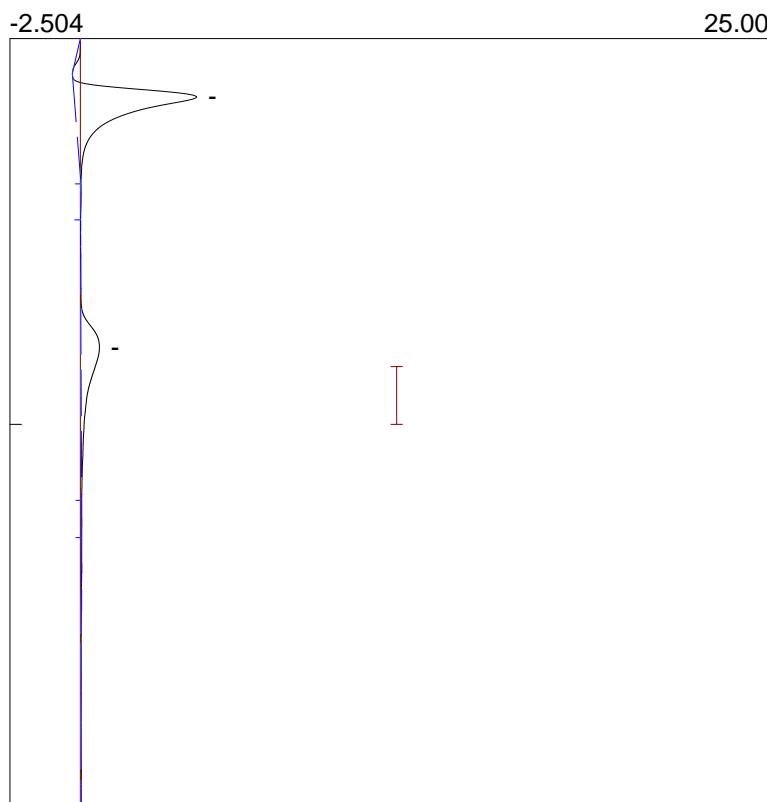
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_88.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	1620.2100
1			1620.2100

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:21:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_89.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:21:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

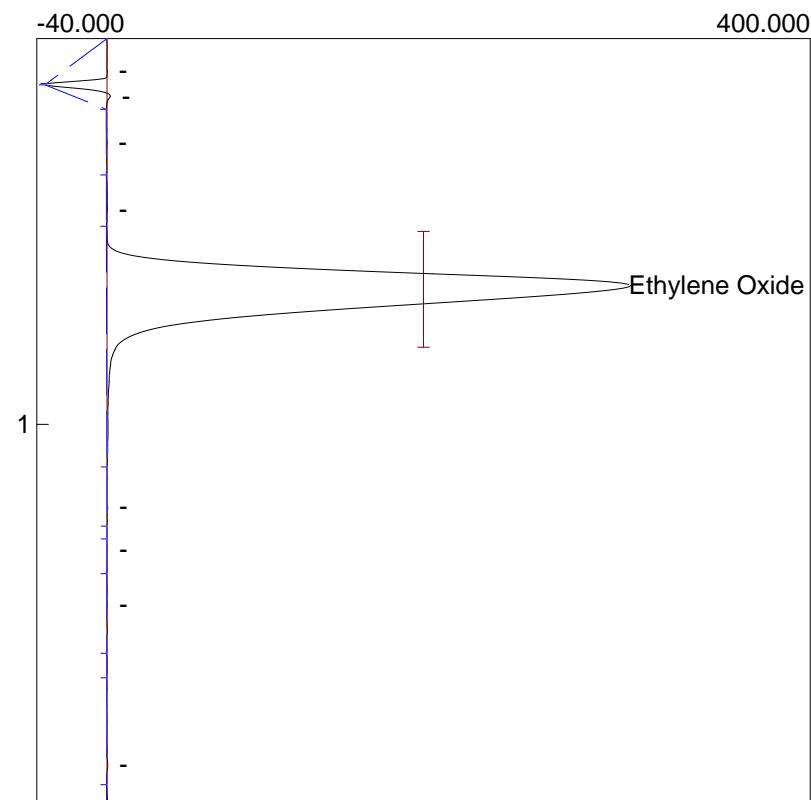
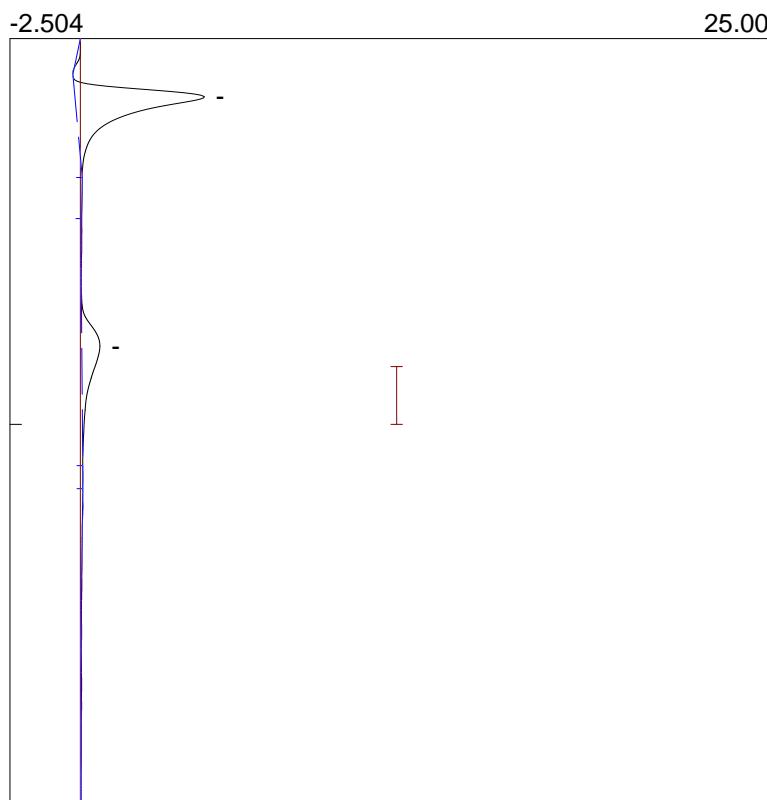
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_89.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	1827.3166
1			1827.3166

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:24:12

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_90.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:24:12

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

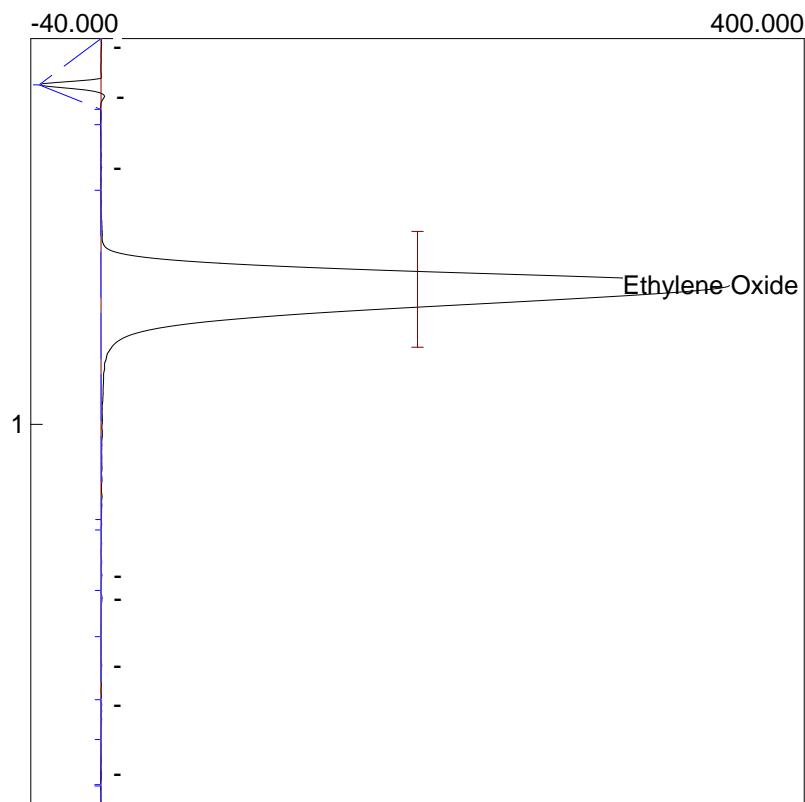
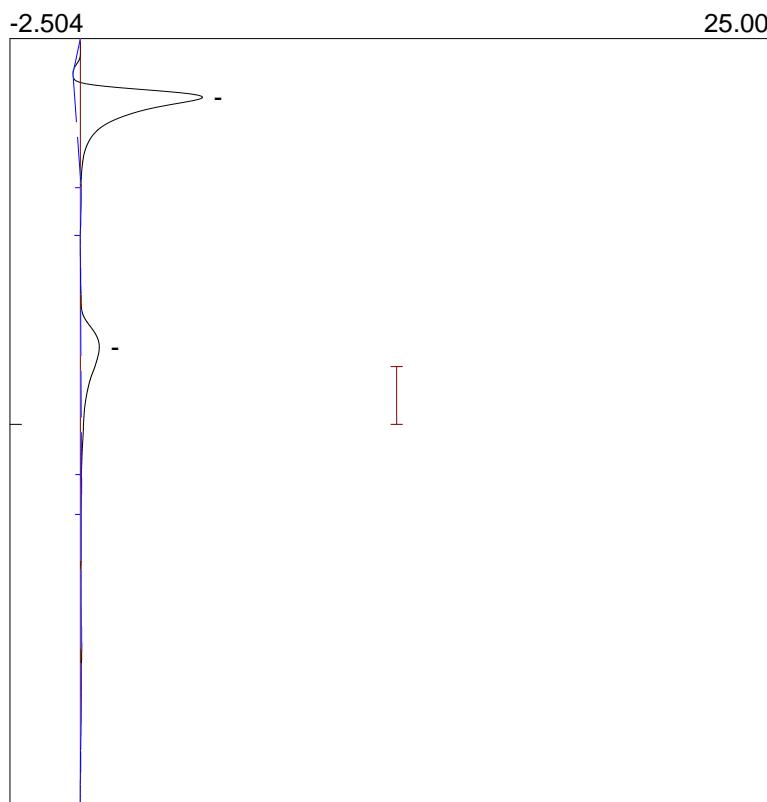
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_90.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	2185.0598
1			2185.0598

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:26:49

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_91.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:26:49

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

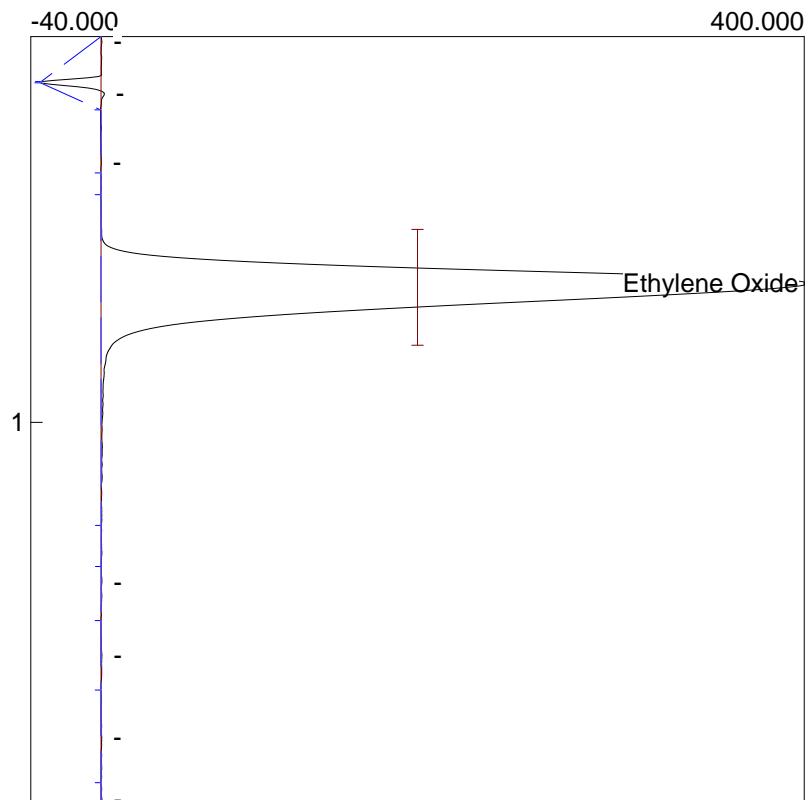
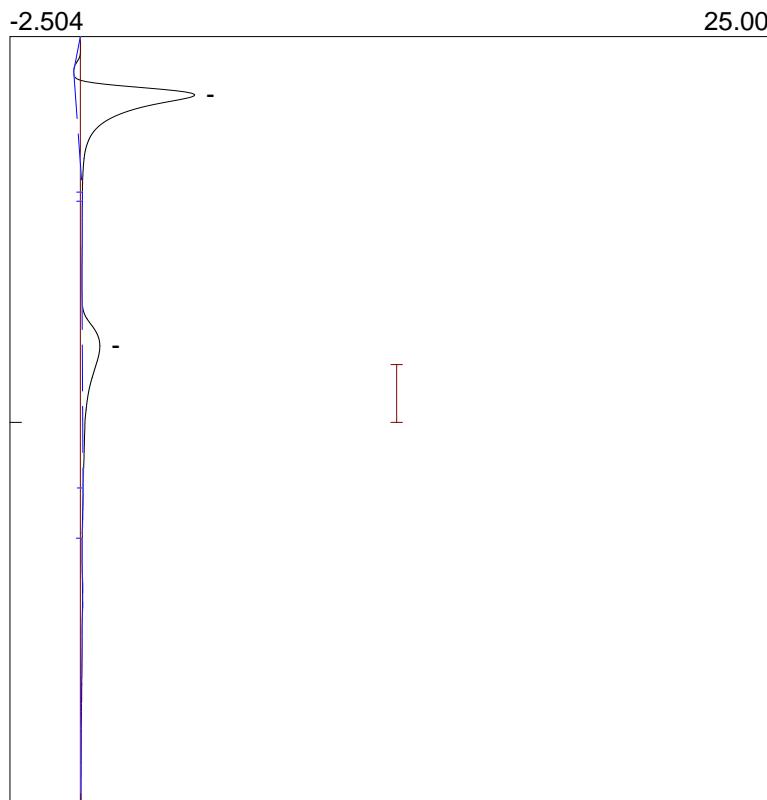
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_91.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	2461.3444
1			2461.3444

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:29:25

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_92.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:29:25

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

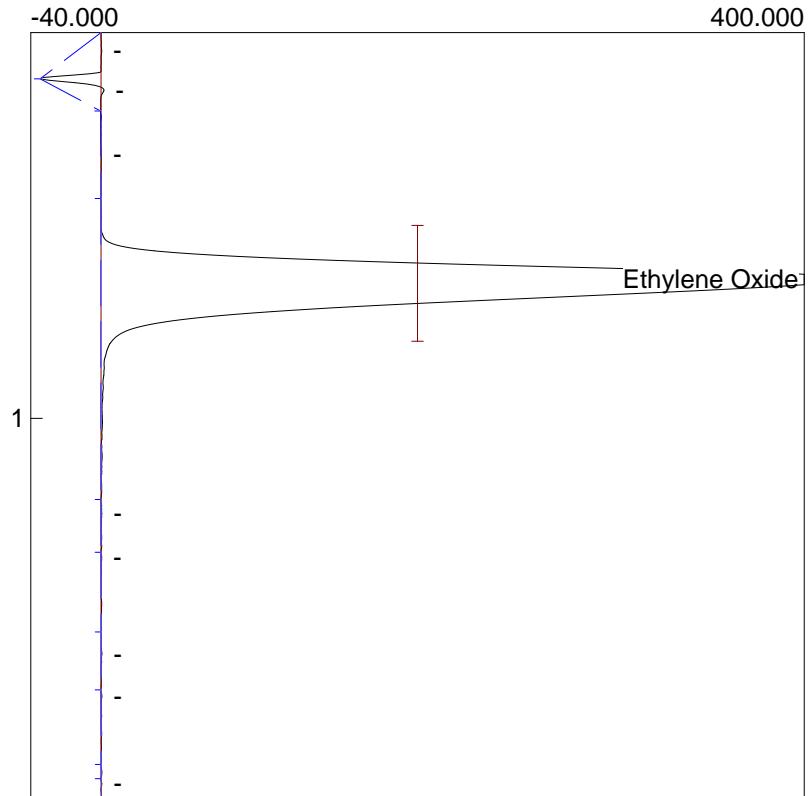
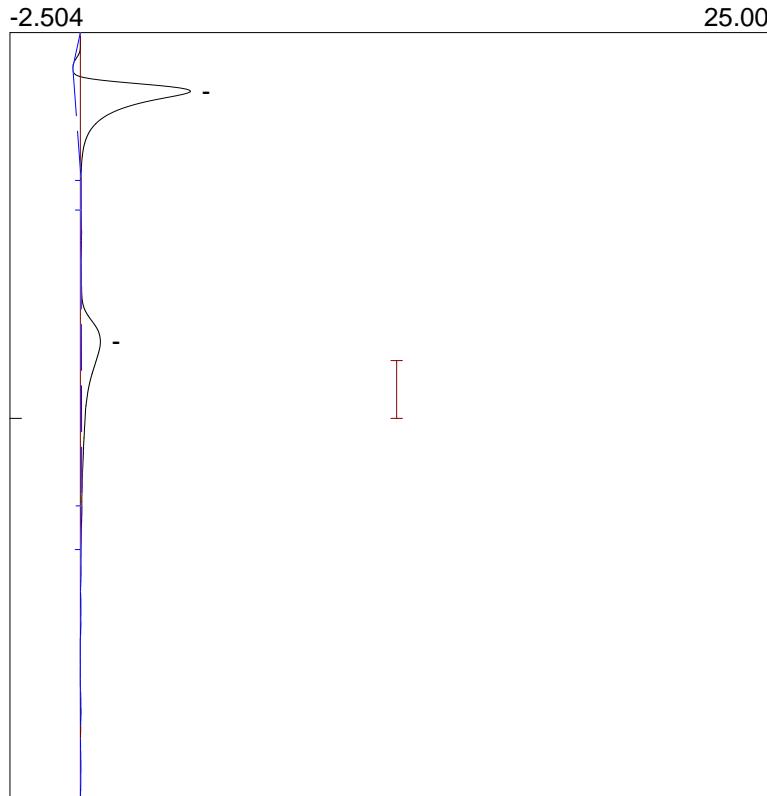
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_92.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	2604.8742
1			2604.8742

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:32:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_93.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:32:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

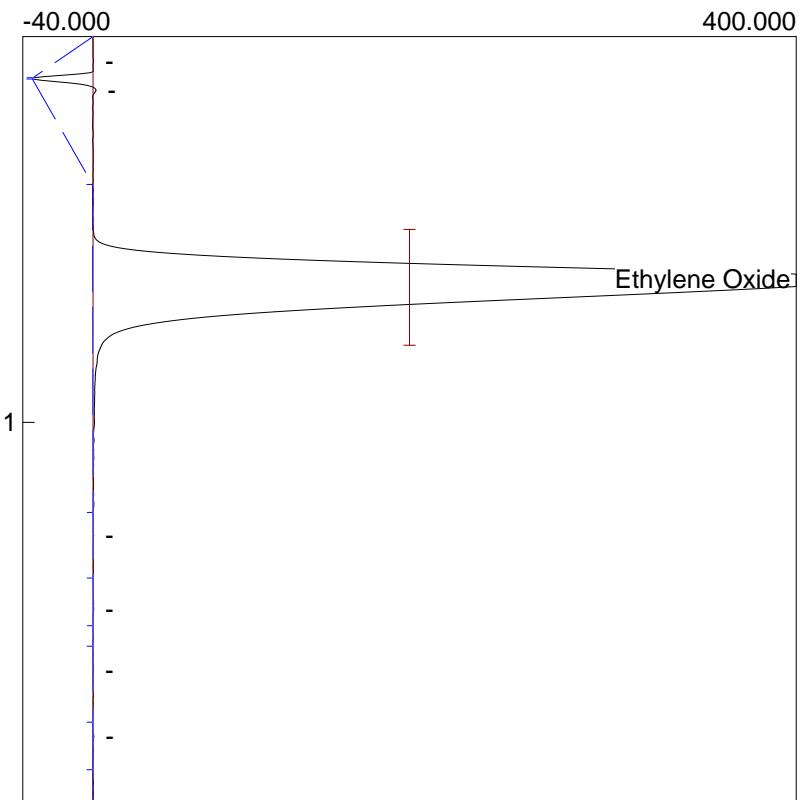
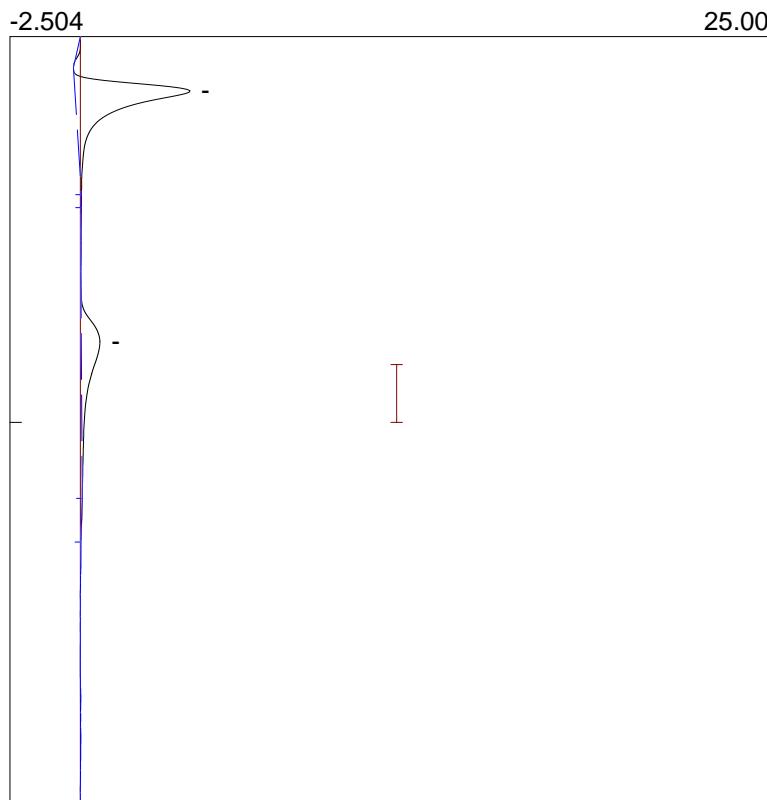
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_93.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	2670.6994
1			2670.6994

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:34:37

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_94.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:34:37

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

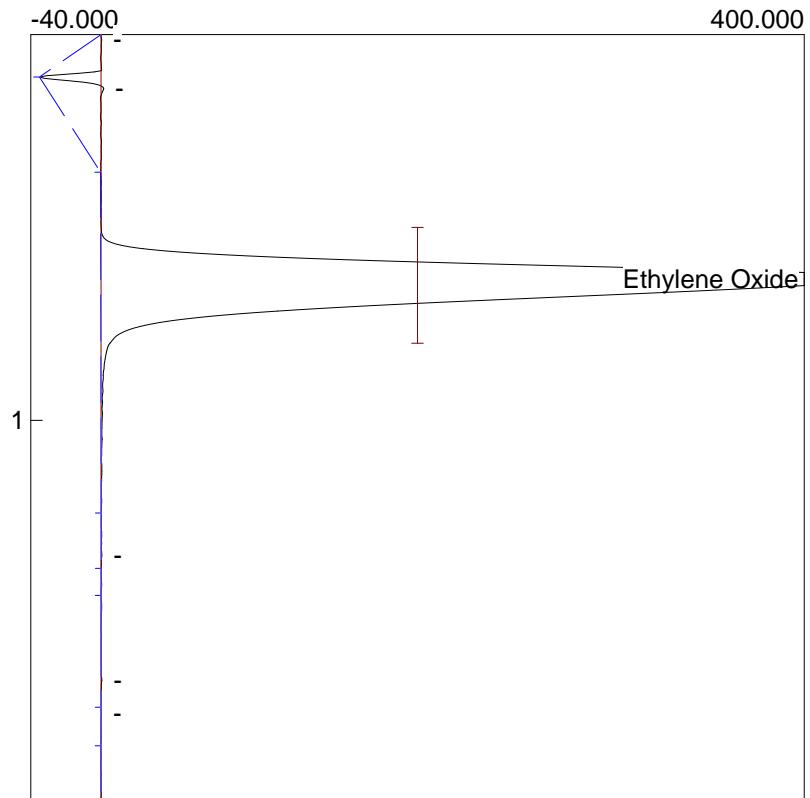
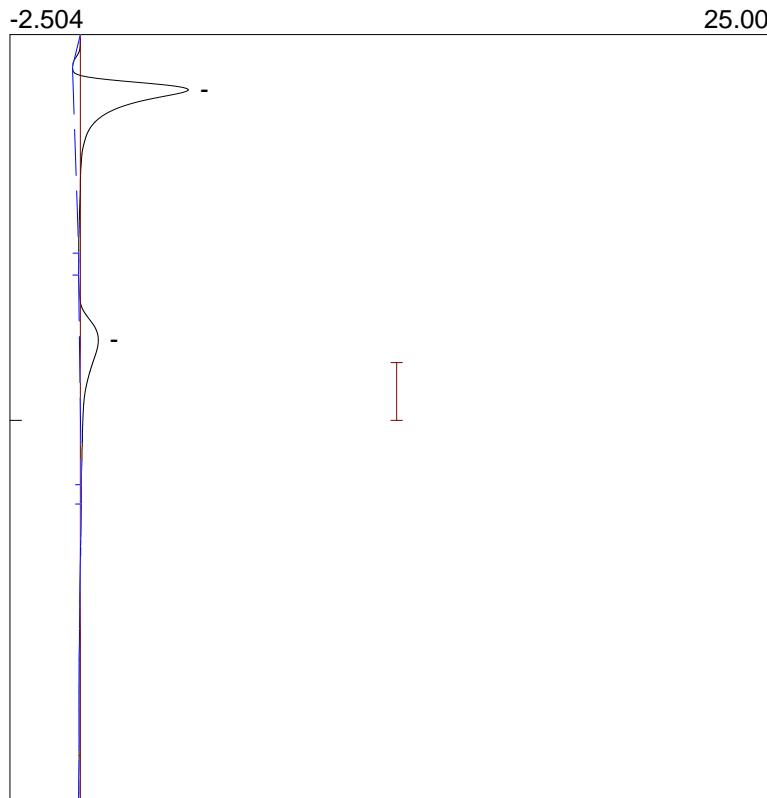
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_94.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	2702.0602
1			2702.0602

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:37:15

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_95.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:37:15

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

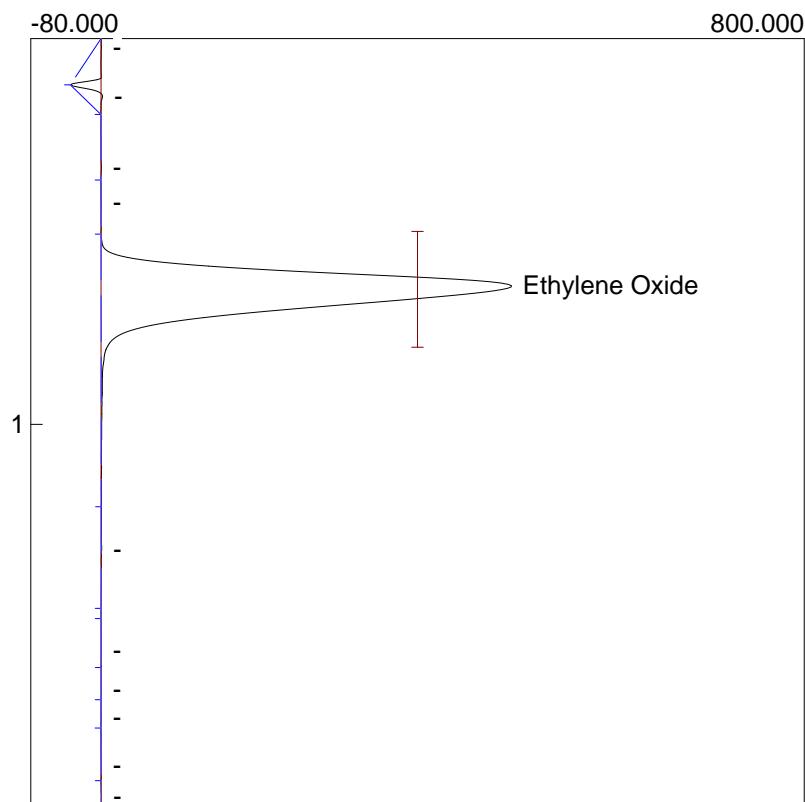
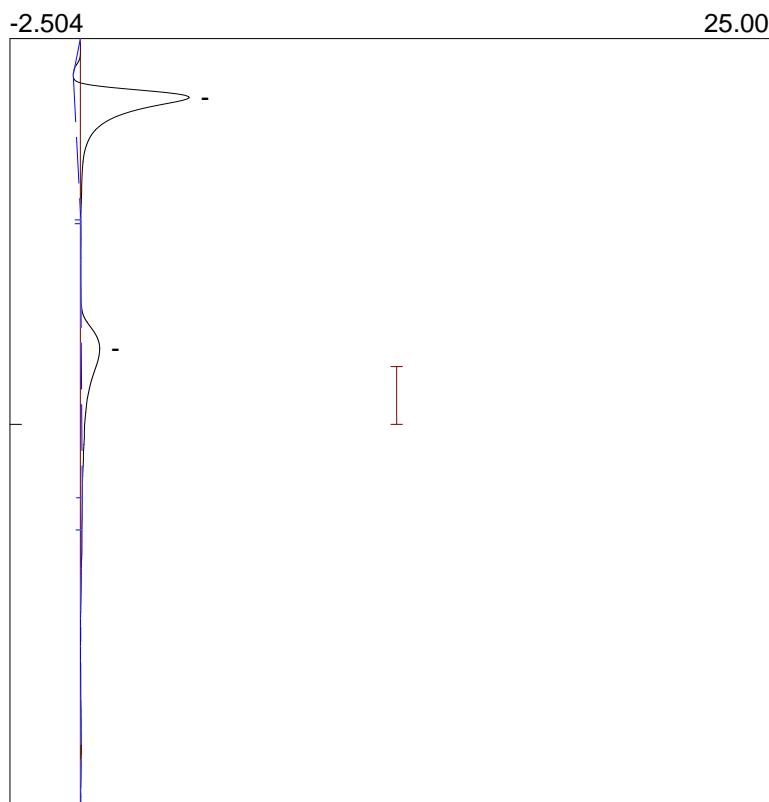
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_95.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	2837.5194
1			2837.5194

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:39:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_96.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:39:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

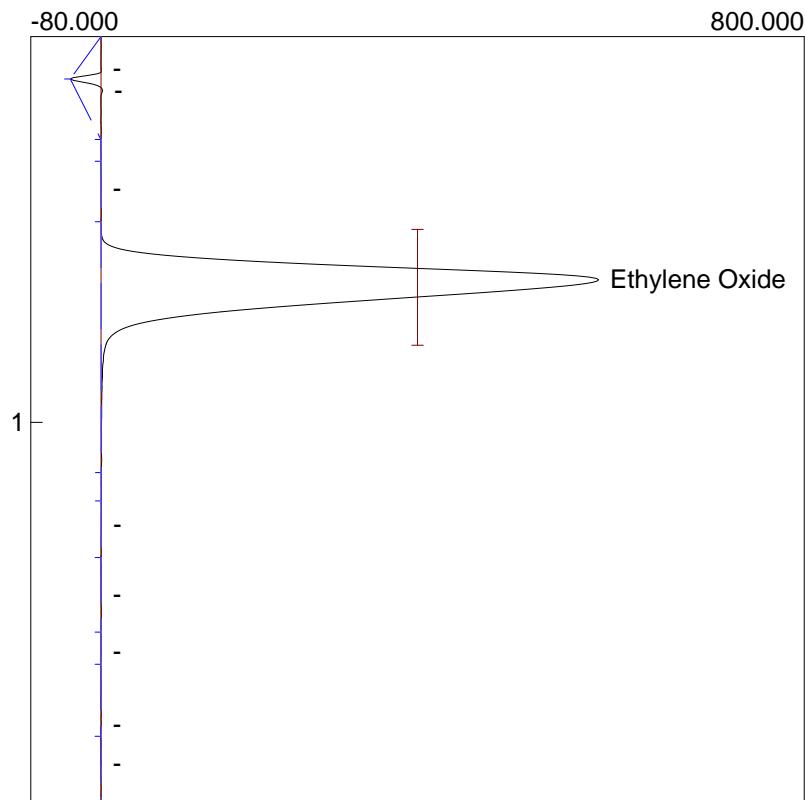
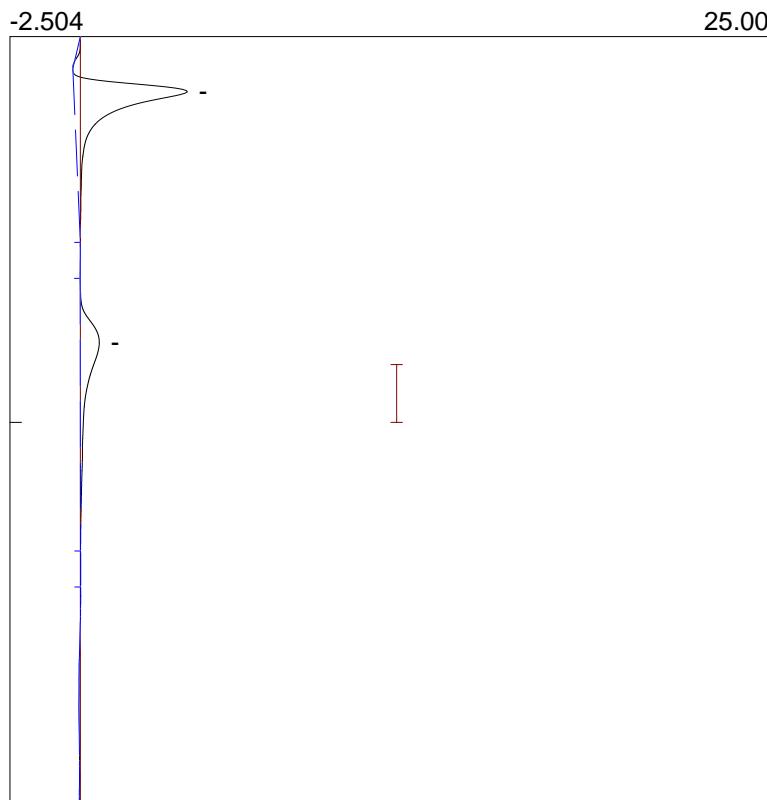
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_96.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	3423.5513
1			3423.5513

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:42:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_97.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:42:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

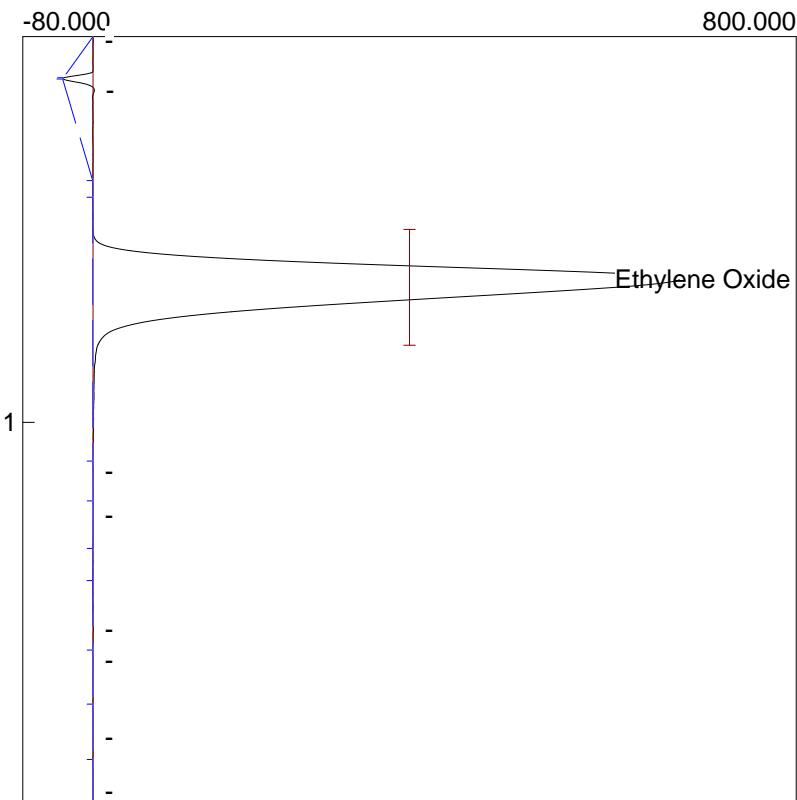
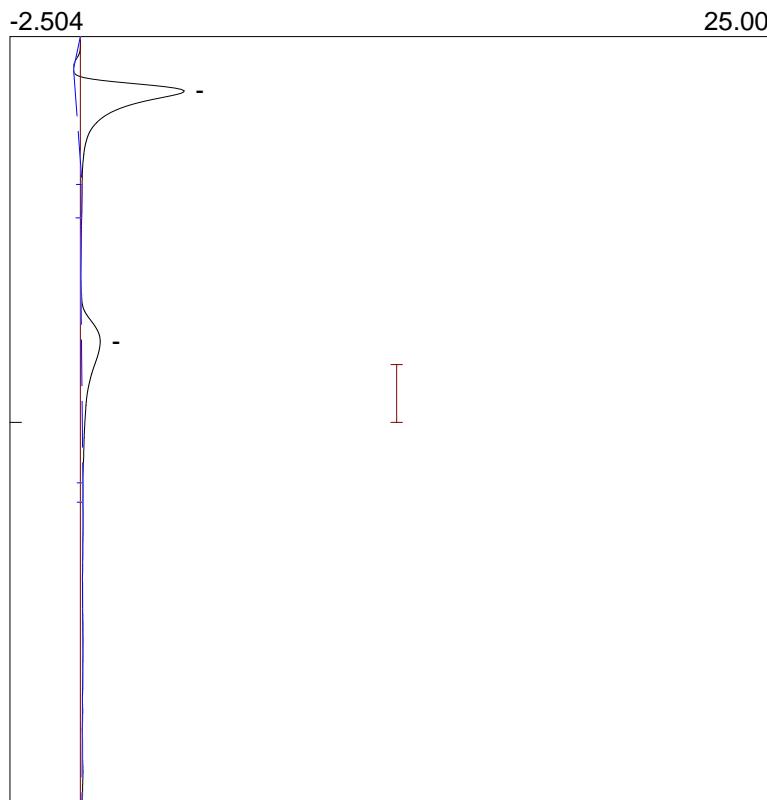
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_97.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	4056.3377
1			4056.3377

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:45:09

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_98.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:45:09

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

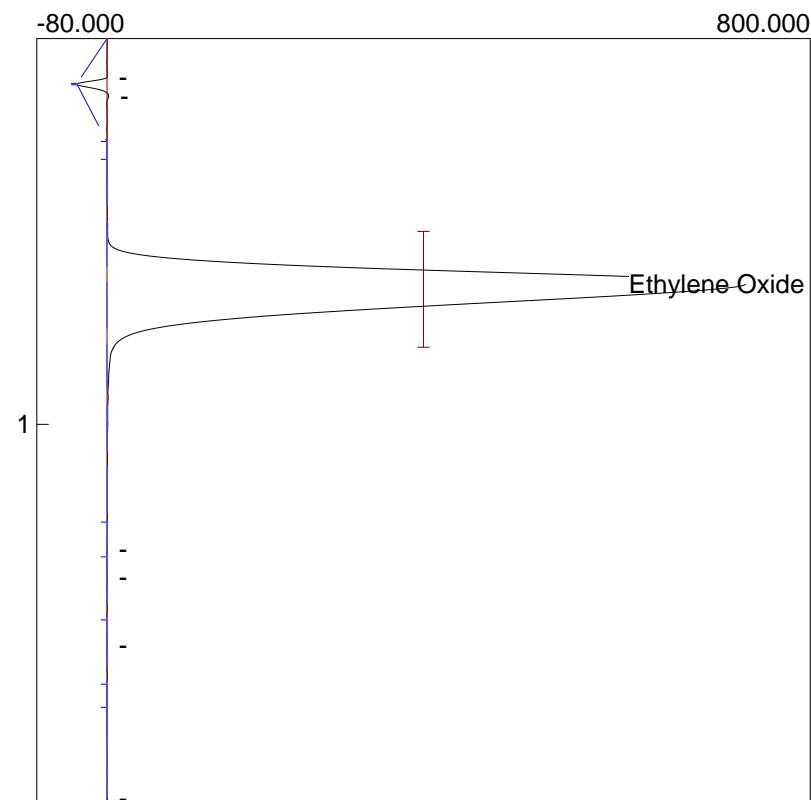
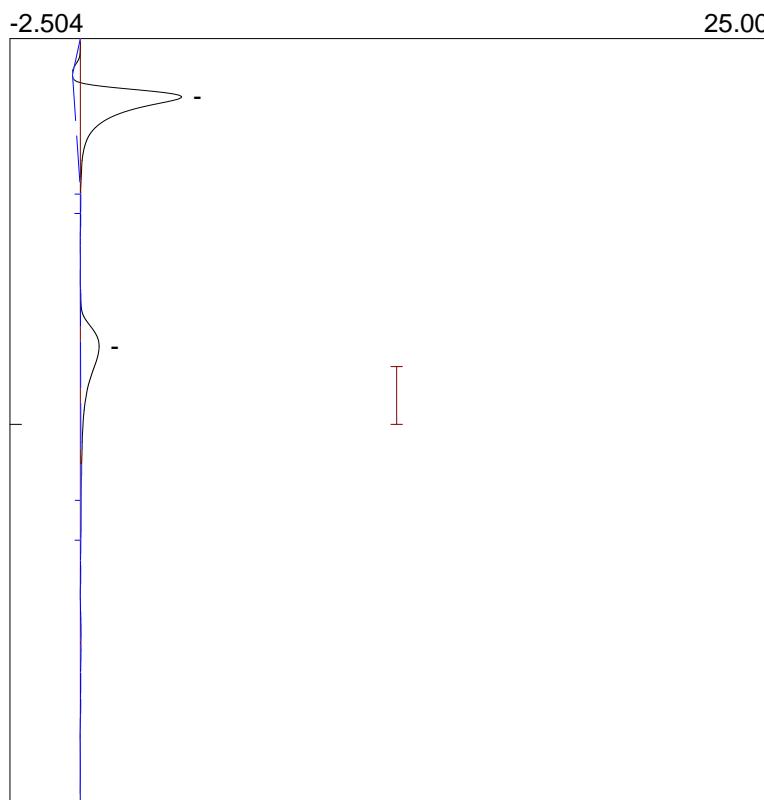
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_98.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4397.1406
1			4397.1406

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:47:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_99.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:47:45

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

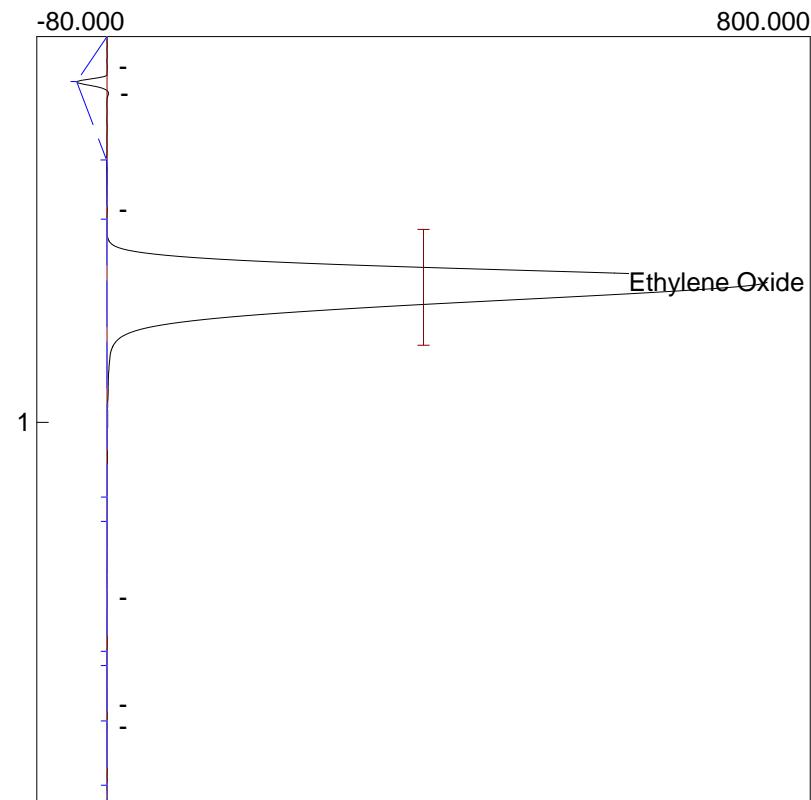
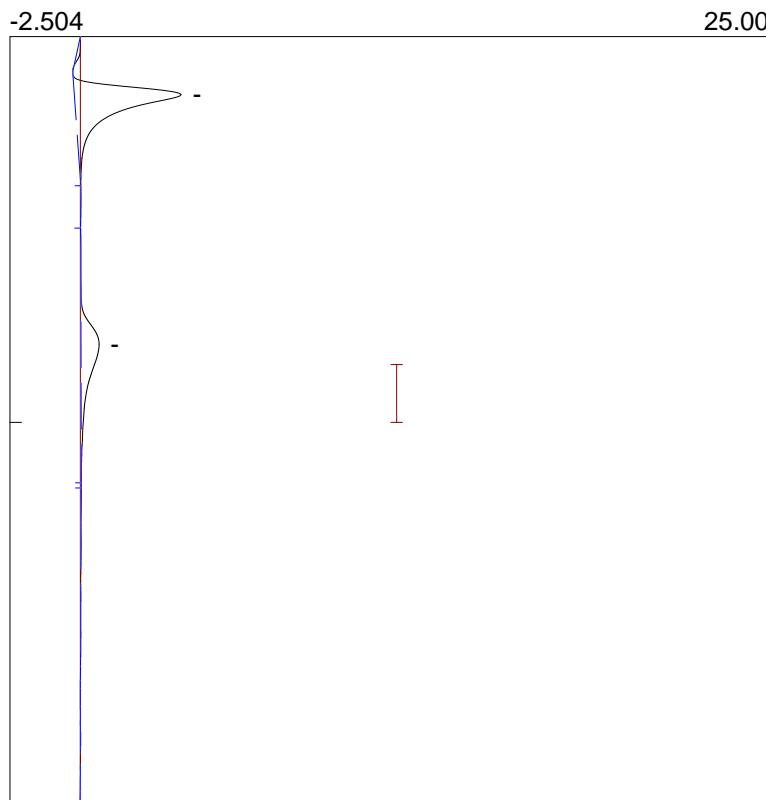
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_99.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4539.3780
1			4539.3780

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:50:21

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_100.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:50:21

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

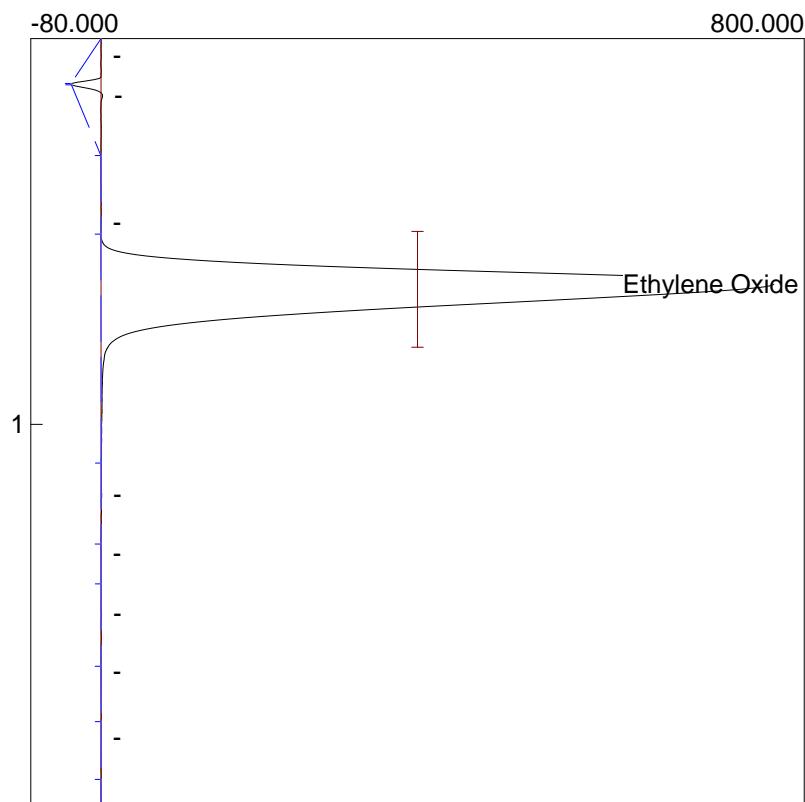
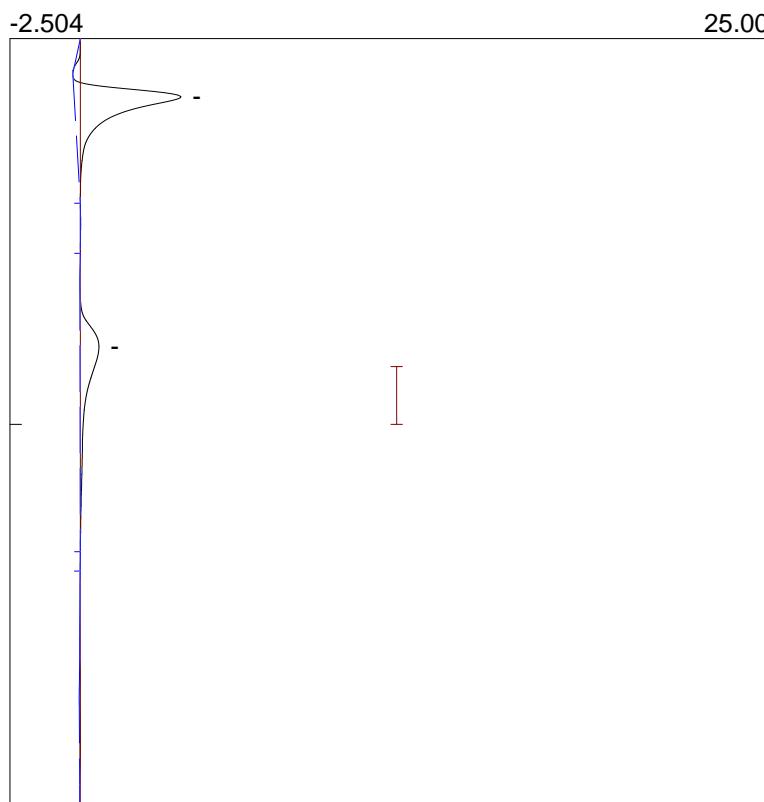
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_100.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4625.5870
1			4625.5870

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:53:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_101.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:53:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

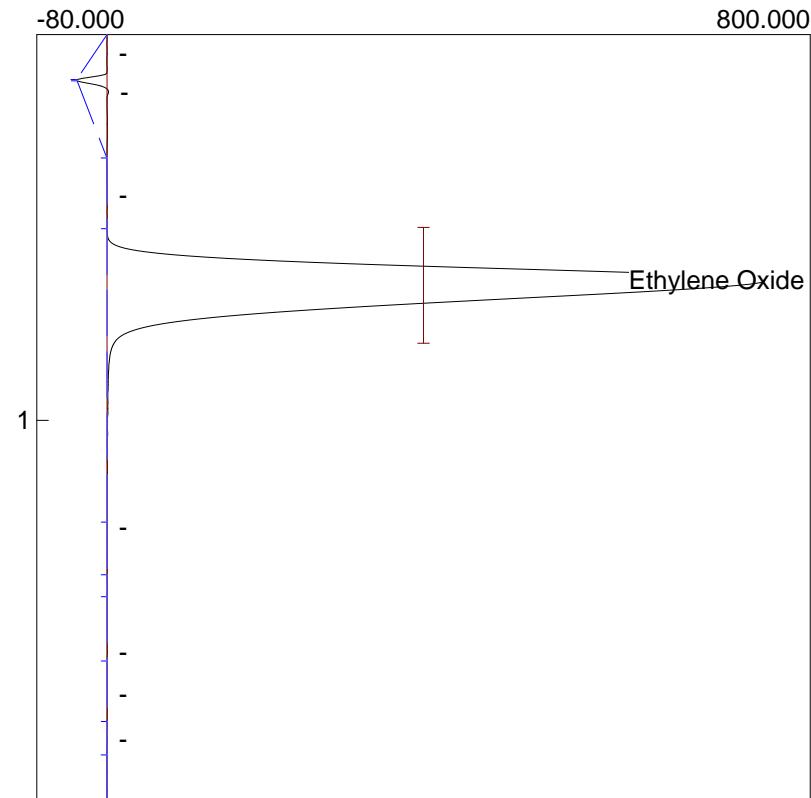
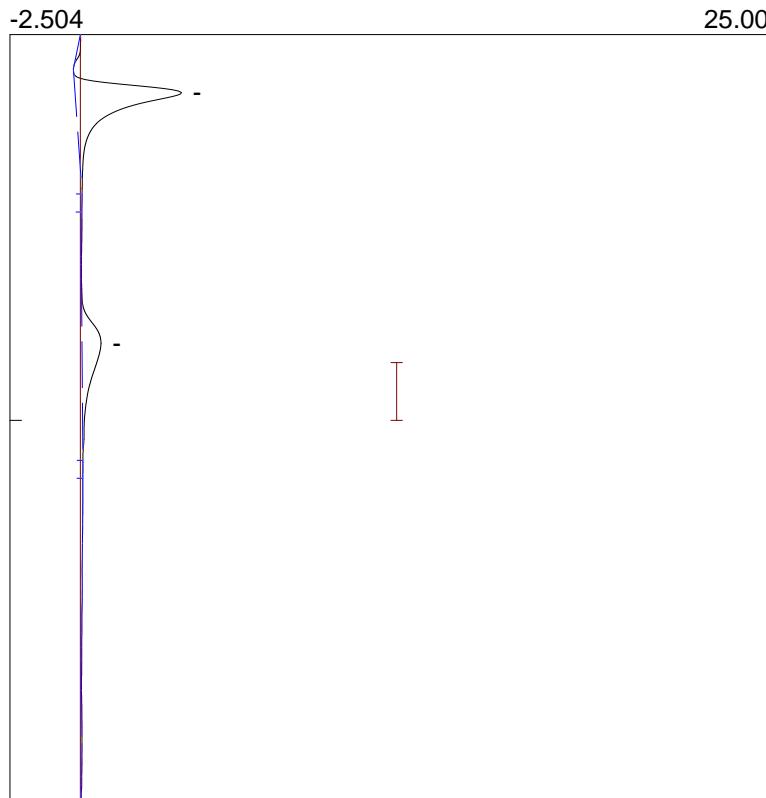
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_101.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4532.7042
1			4532.7042

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:55:56

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_102.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:55:56

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

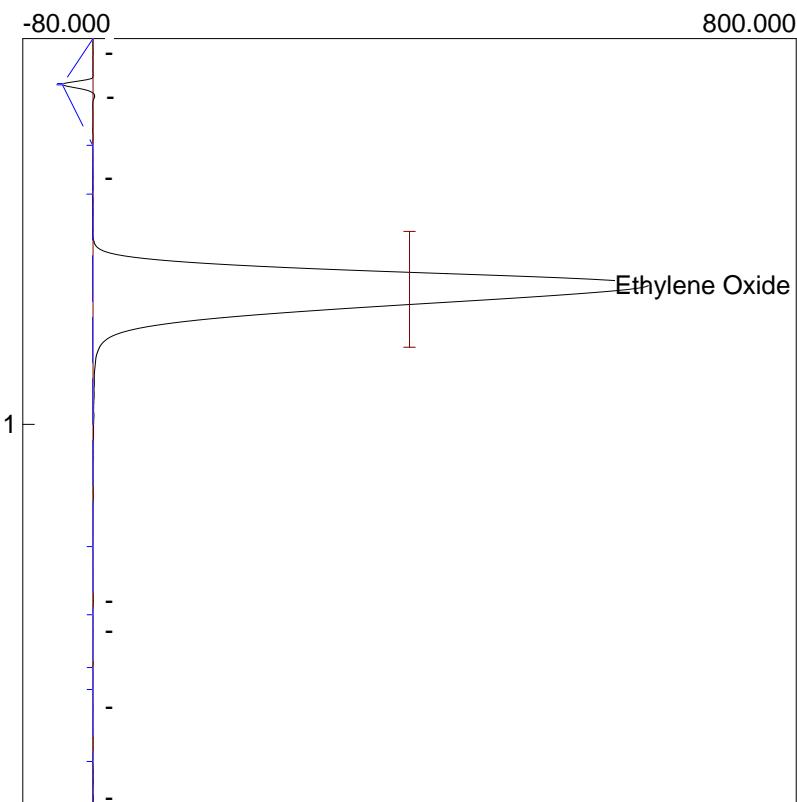
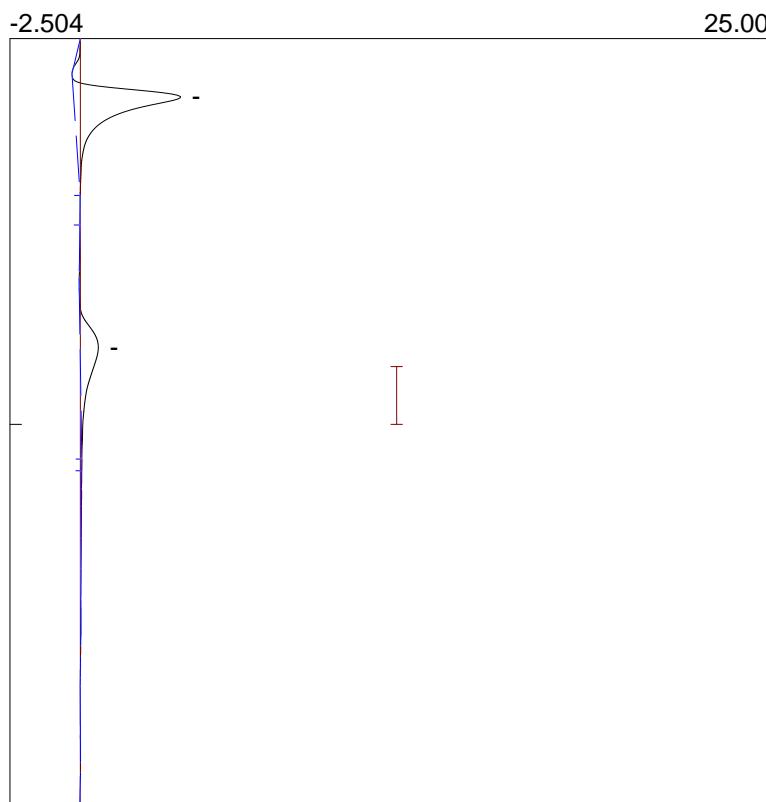
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_102.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	3846.1036
1			3846.1036

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:58:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_103.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 14:58:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

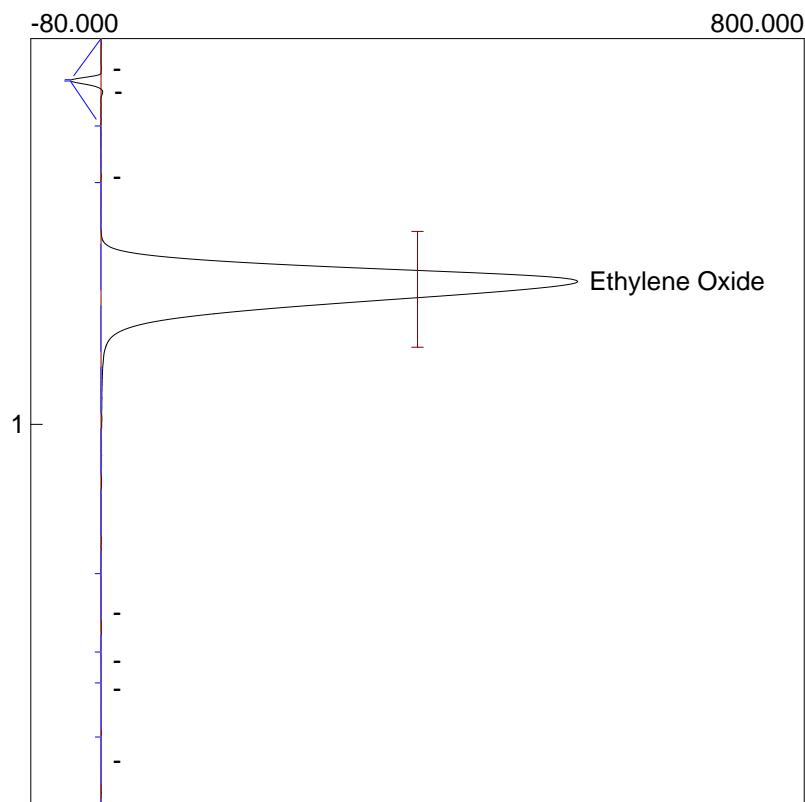
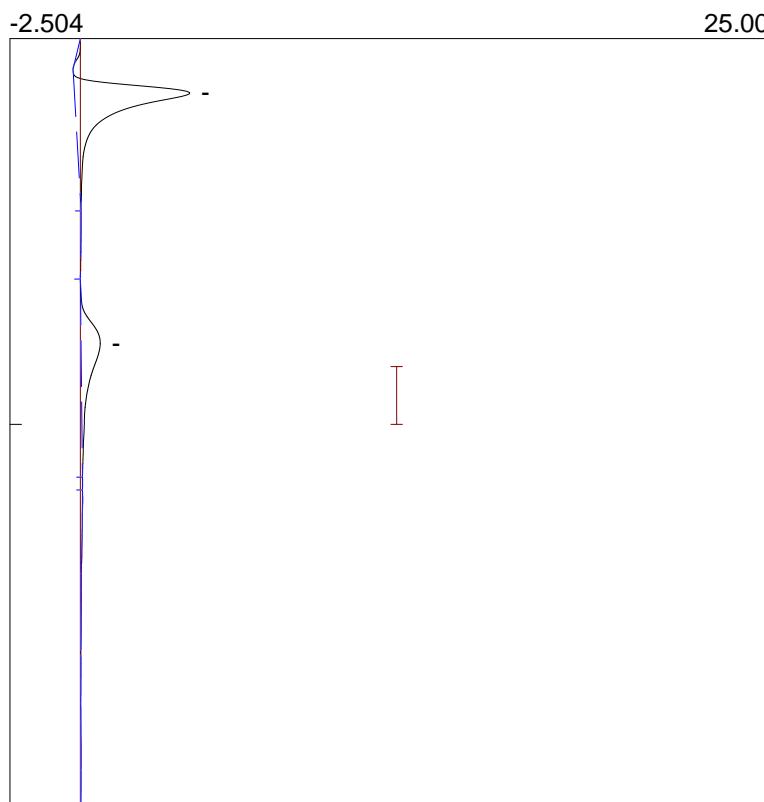
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_103.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	3316.5460
1			3316.5460

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 15:01:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_104.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/13/2019 15:01:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

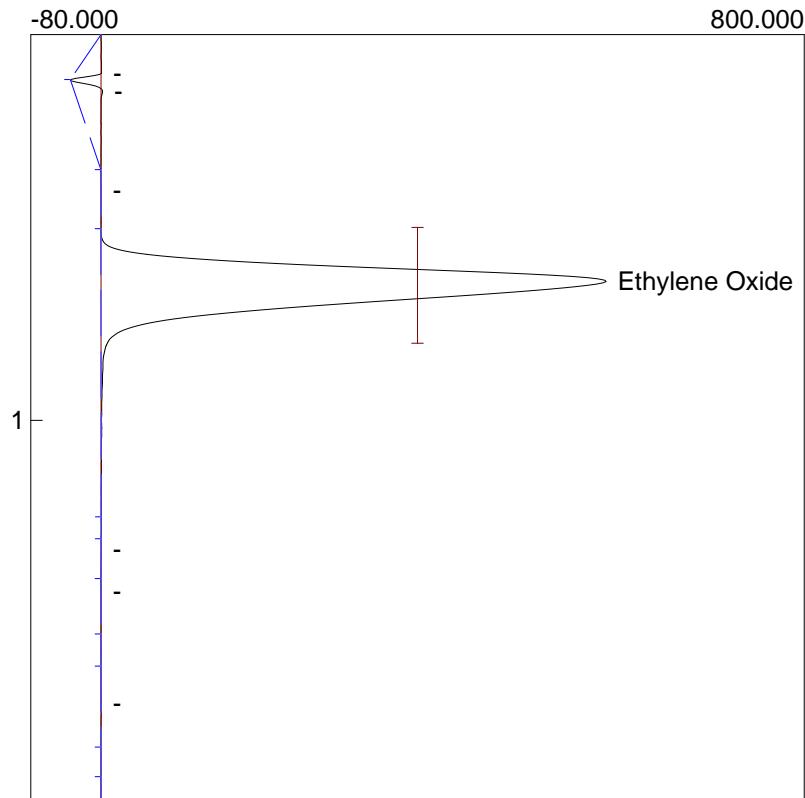
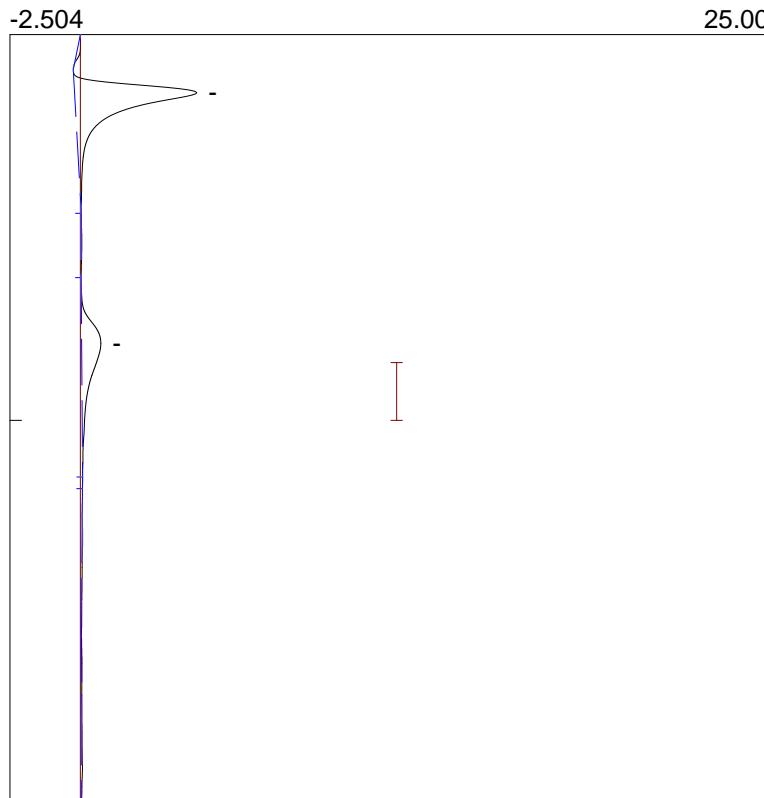
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_104.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	3493.2238
1			3493.2238

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 00:46:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_329.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 00:46:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

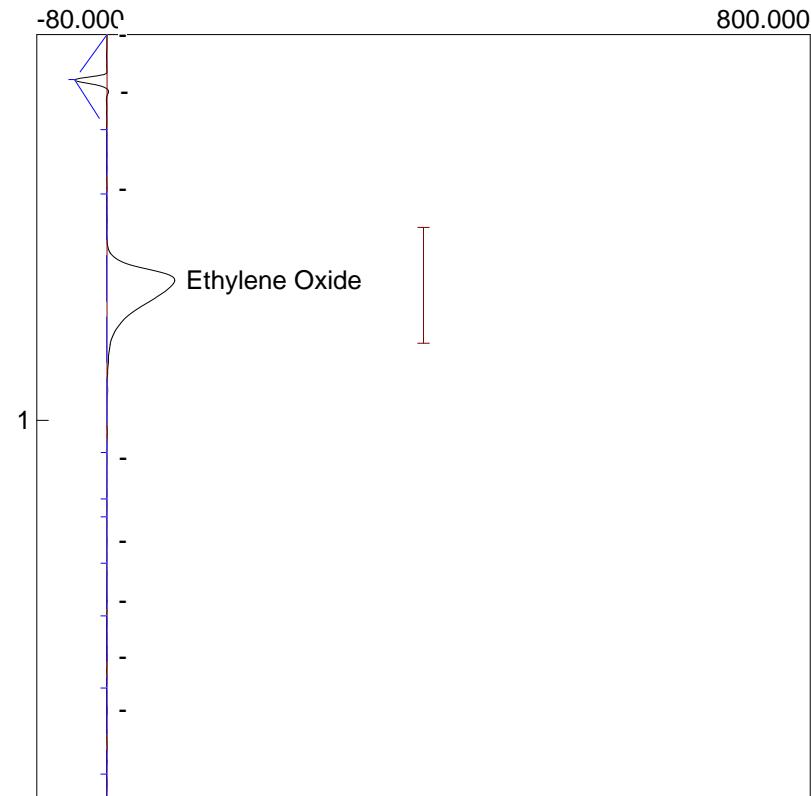
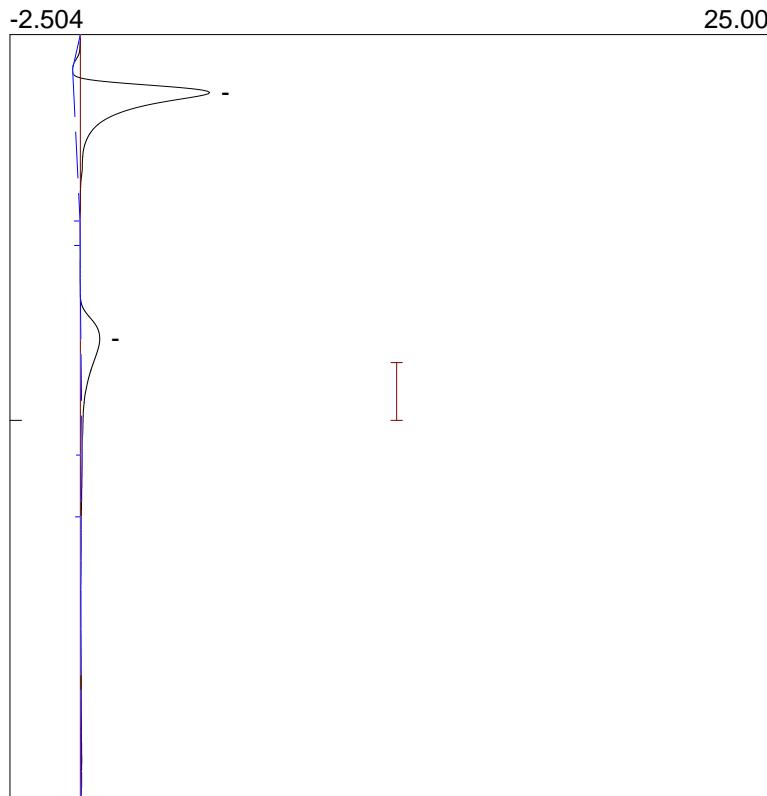
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_329.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	534.3950
1			534.3950

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 00:49:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_330.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 00:49:27

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

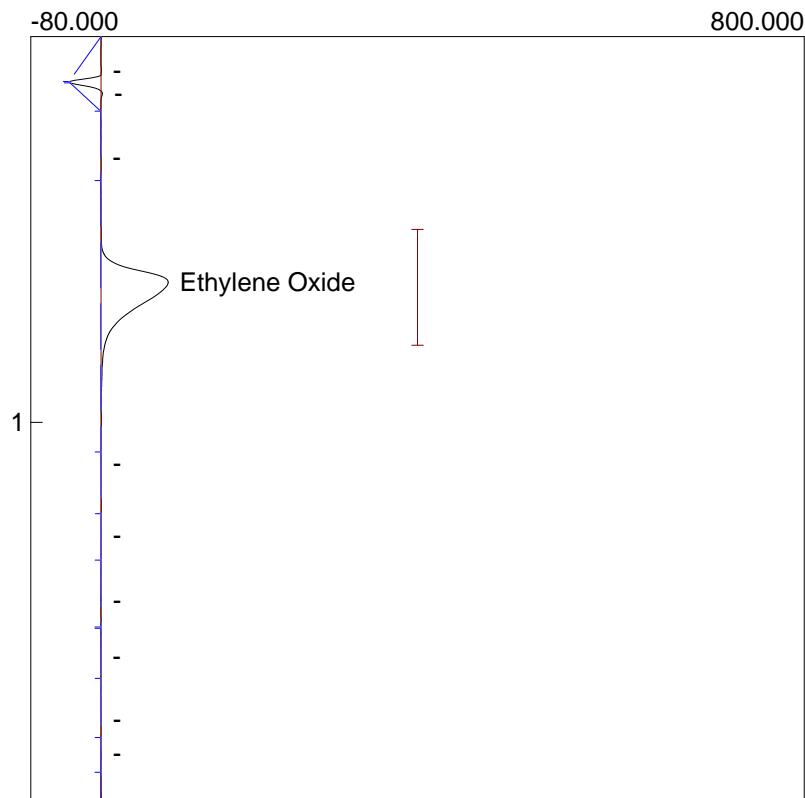
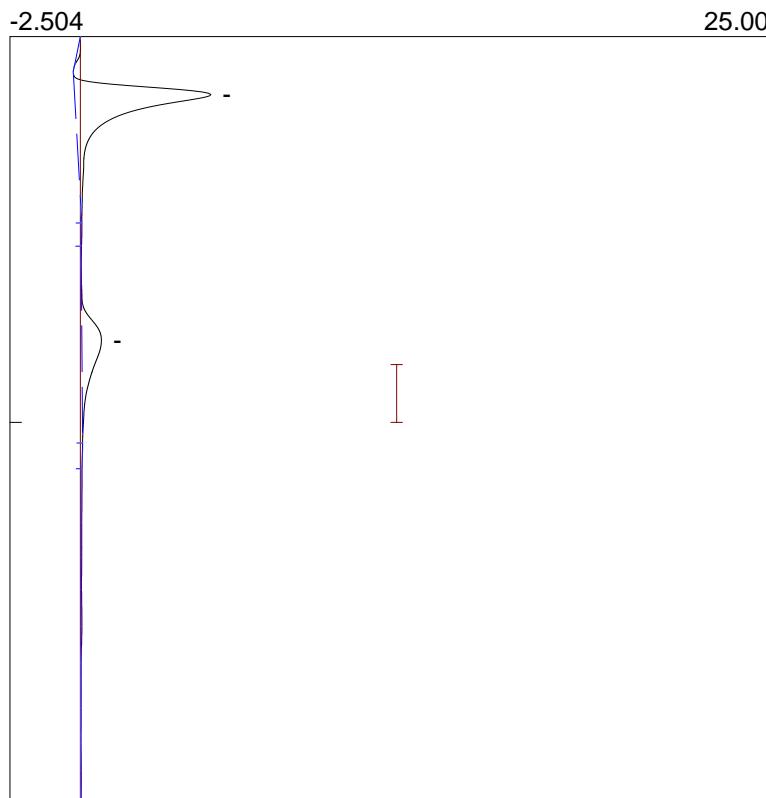
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_330.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	532.9454
1			532.9454

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:31:08

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_346.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:31:08

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

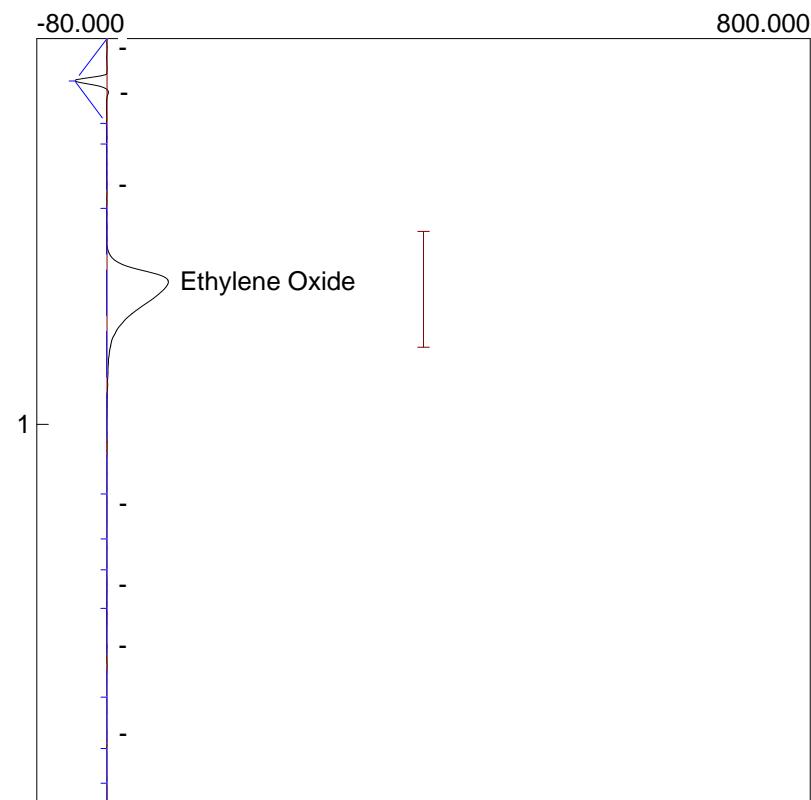
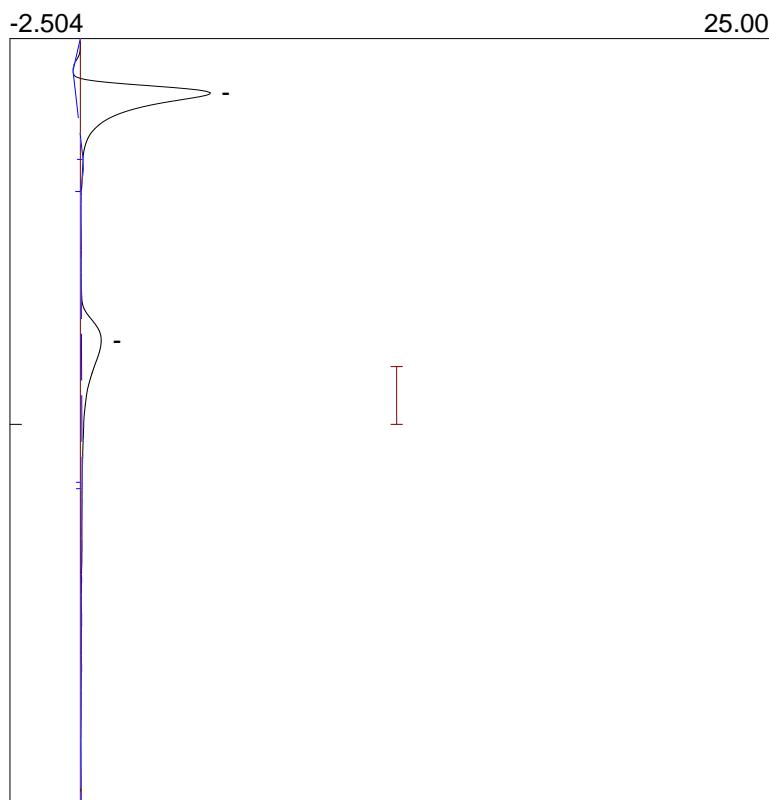
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_346.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	499.2232
1			499.2232

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:33:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_347.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:33:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

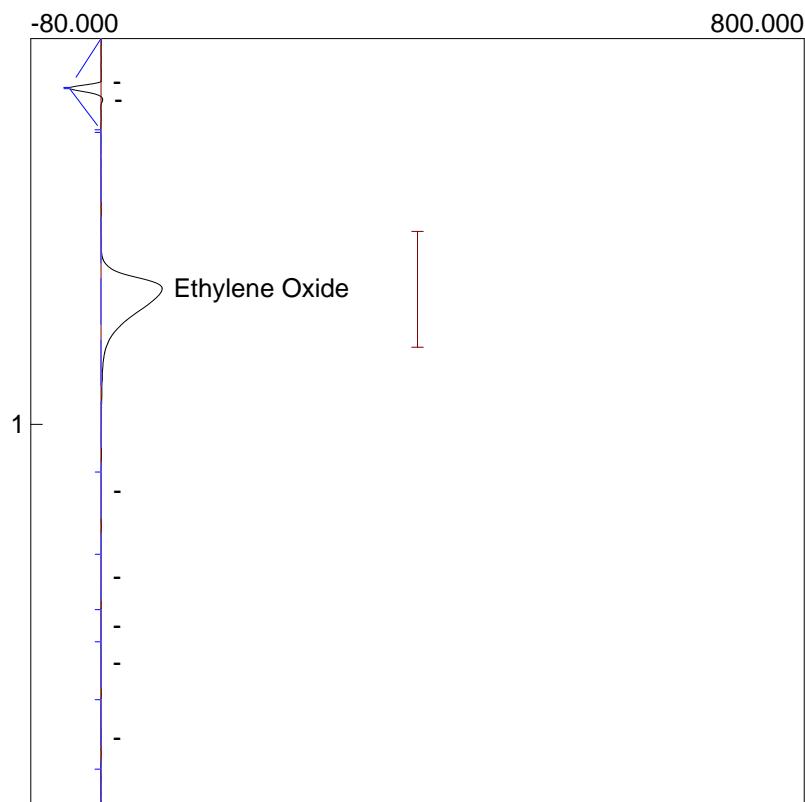
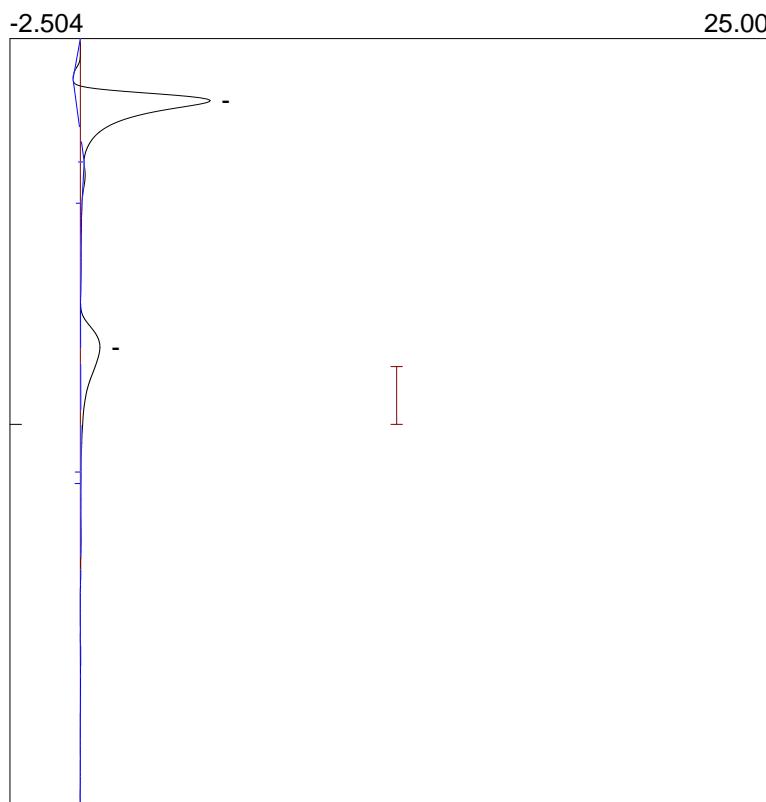
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_347.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	494.8228
1			494.8228

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:36:23

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_348.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:36:23

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

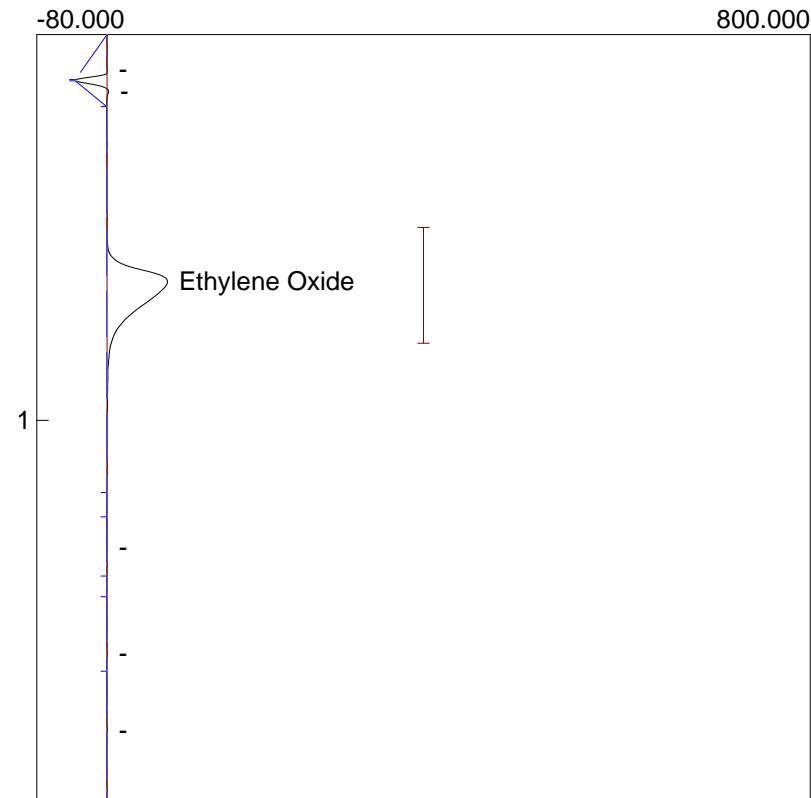
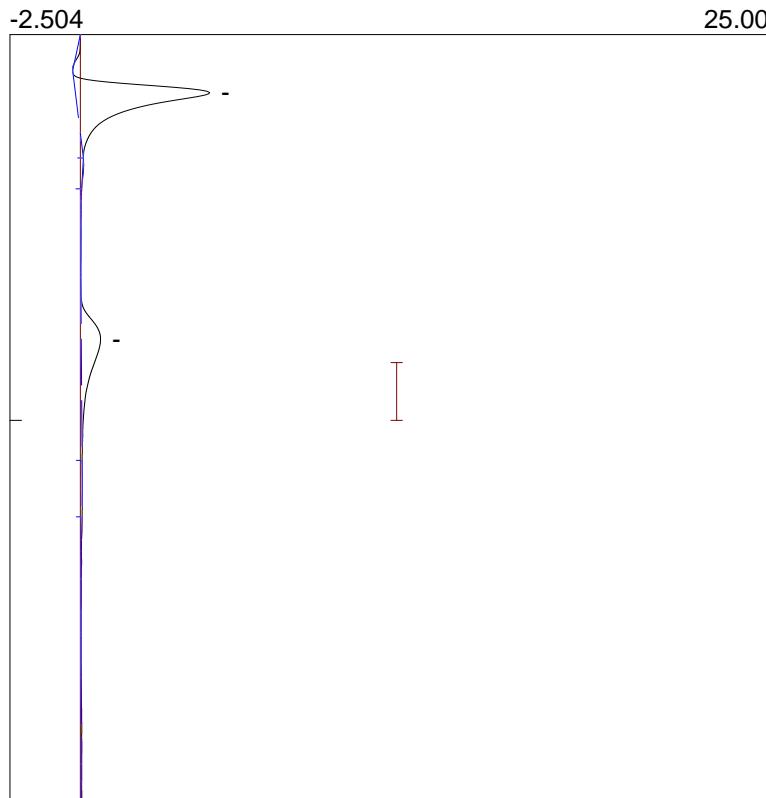
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_348.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	500.1718
1			500.1718

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:39:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_349.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:39:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

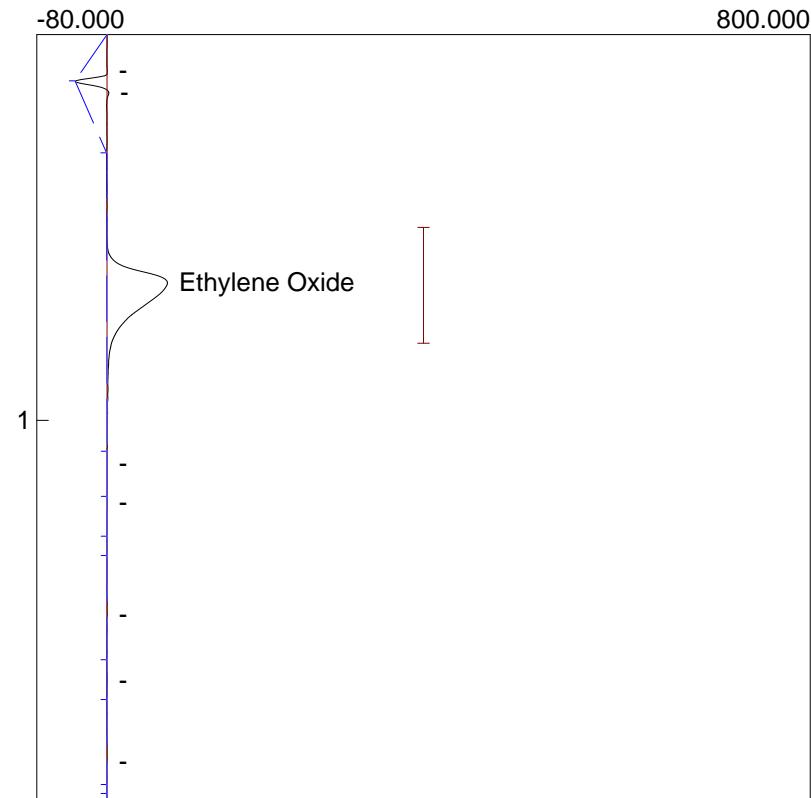
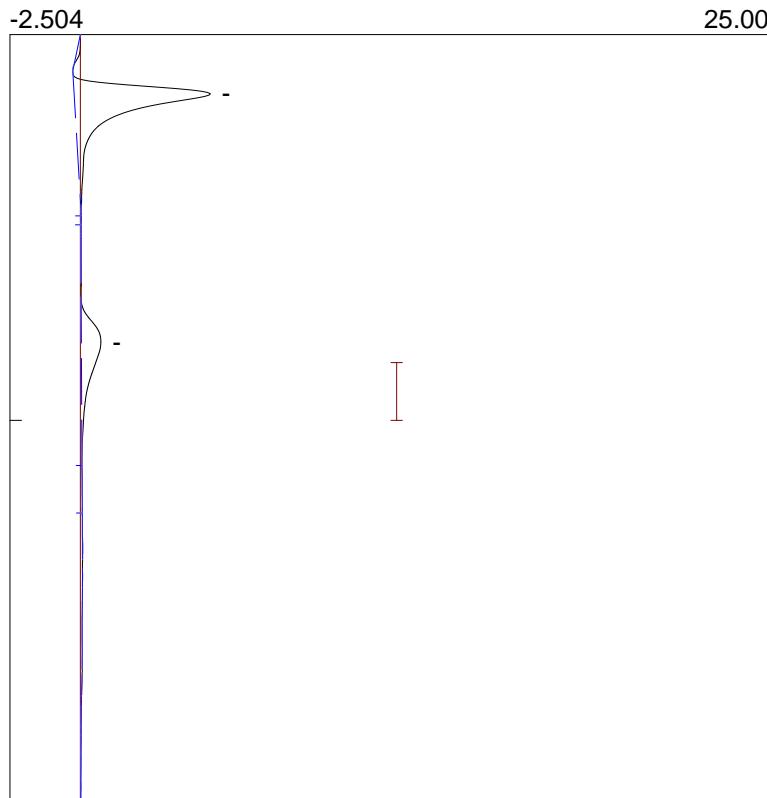
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_349.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	493.8948
1			493.8948

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:41:37

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_350.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:41:37

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

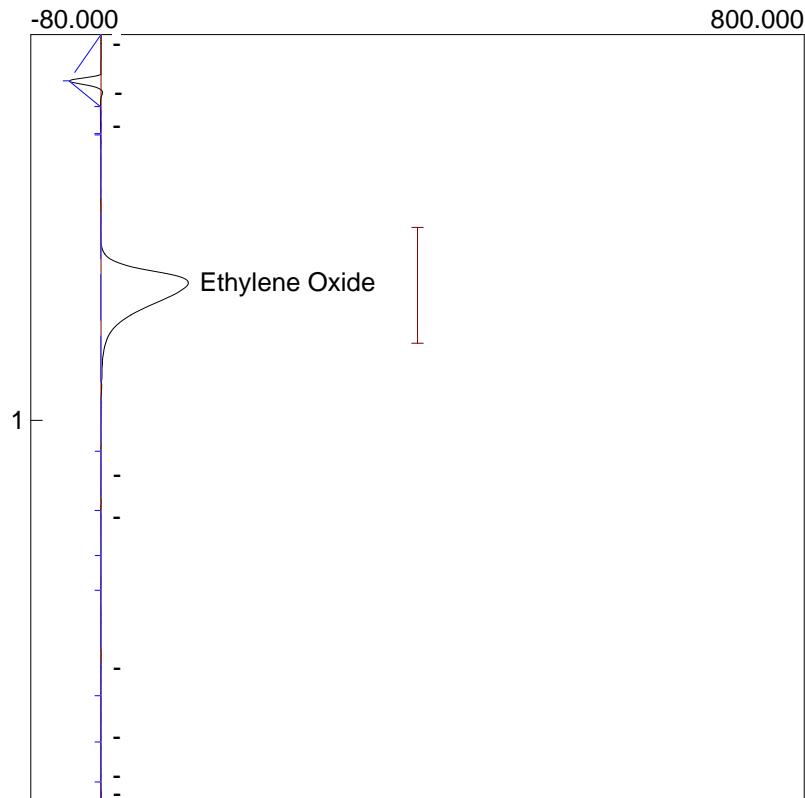
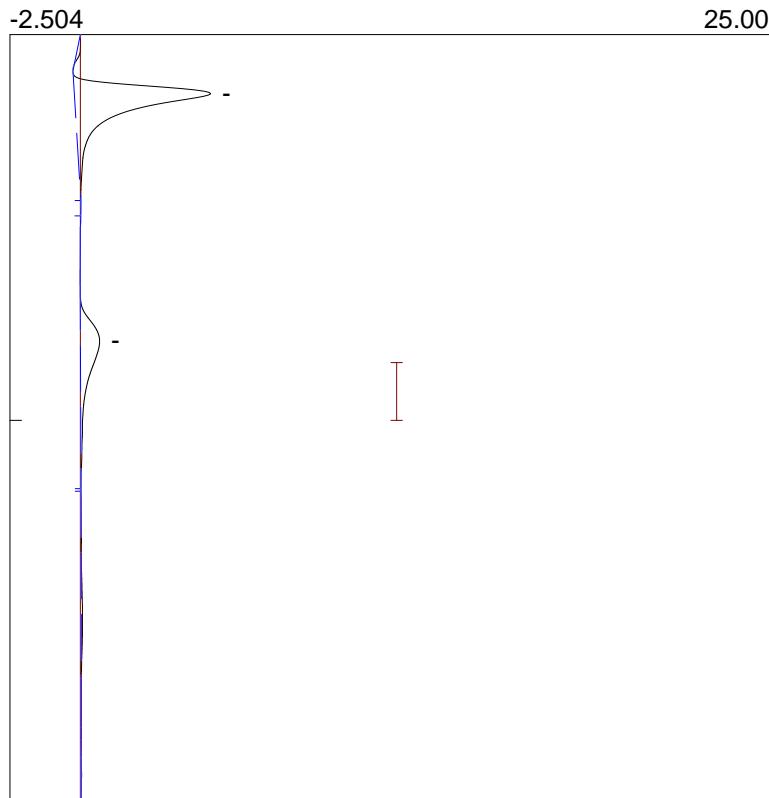
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_350.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	669.9900
1			669.9900

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:44:20

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_351.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:44:20

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

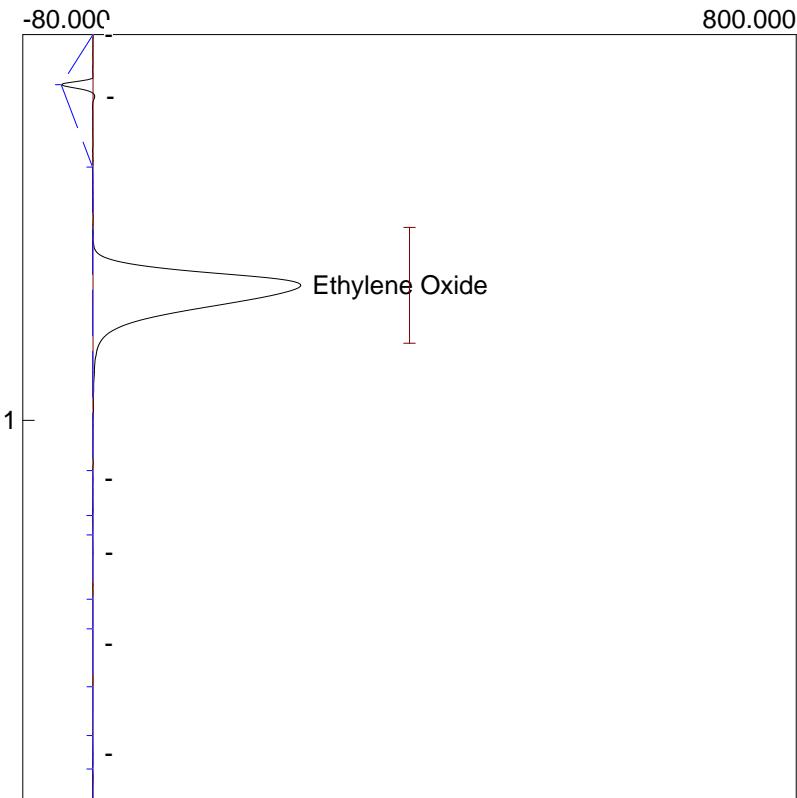
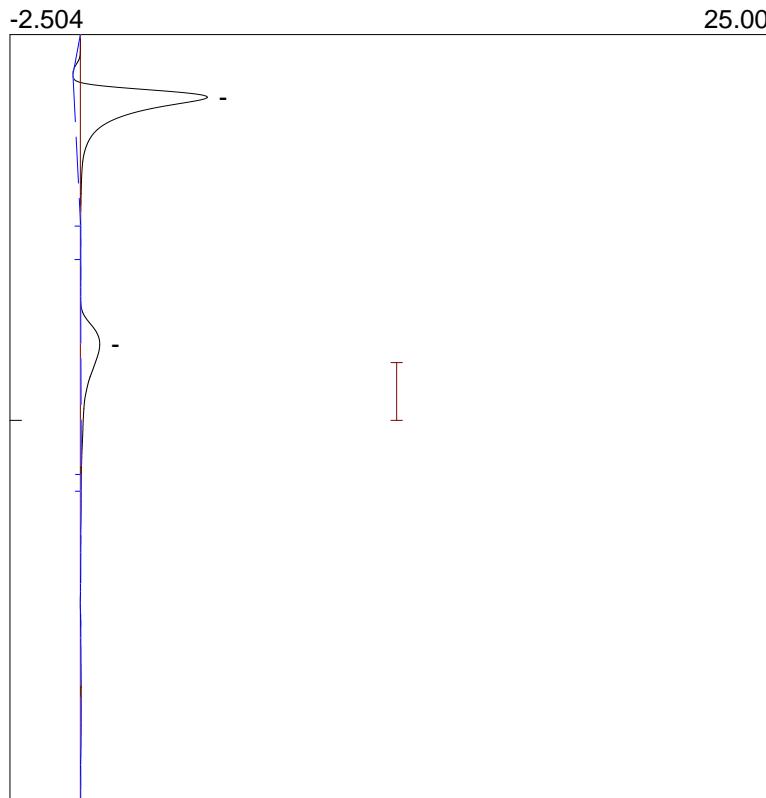
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_351.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.650	1506.4052
1			1506.4052

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:46:56

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_352.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:46:56

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

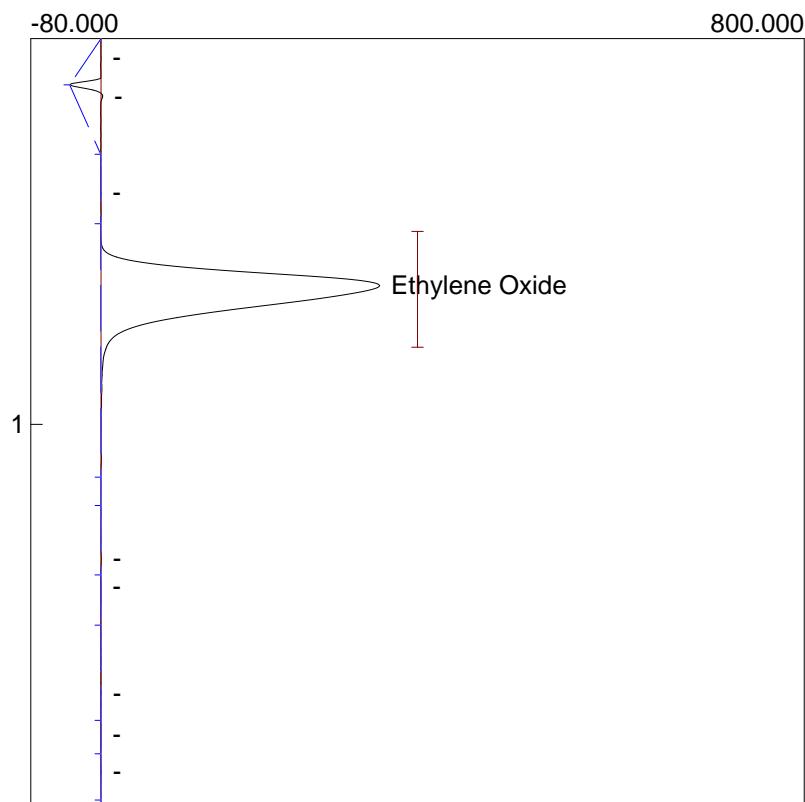
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_352.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	1986.9365
1			1986.9365

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:49:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_353.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:49:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

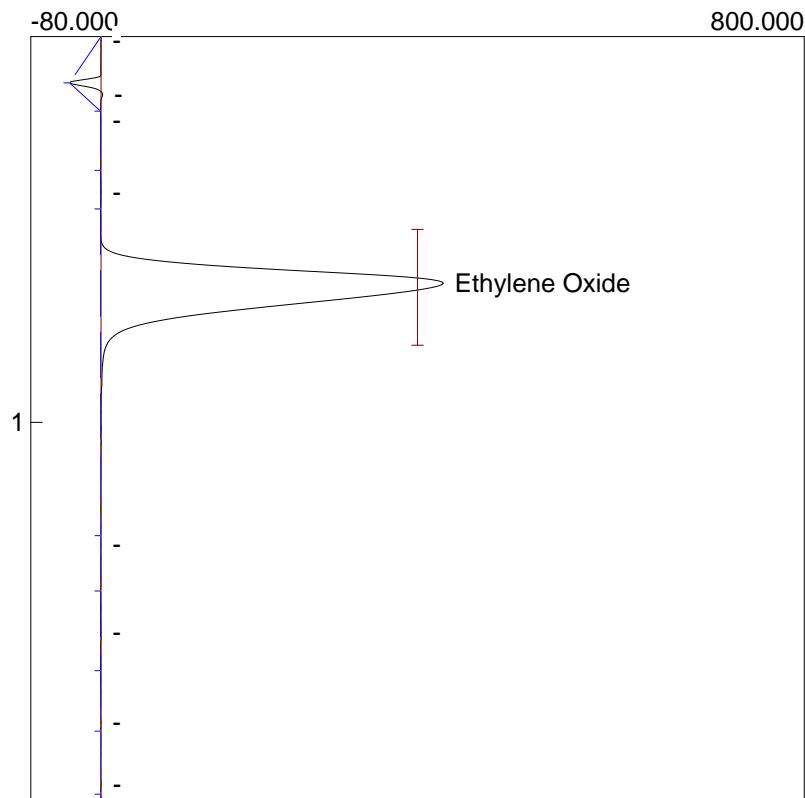
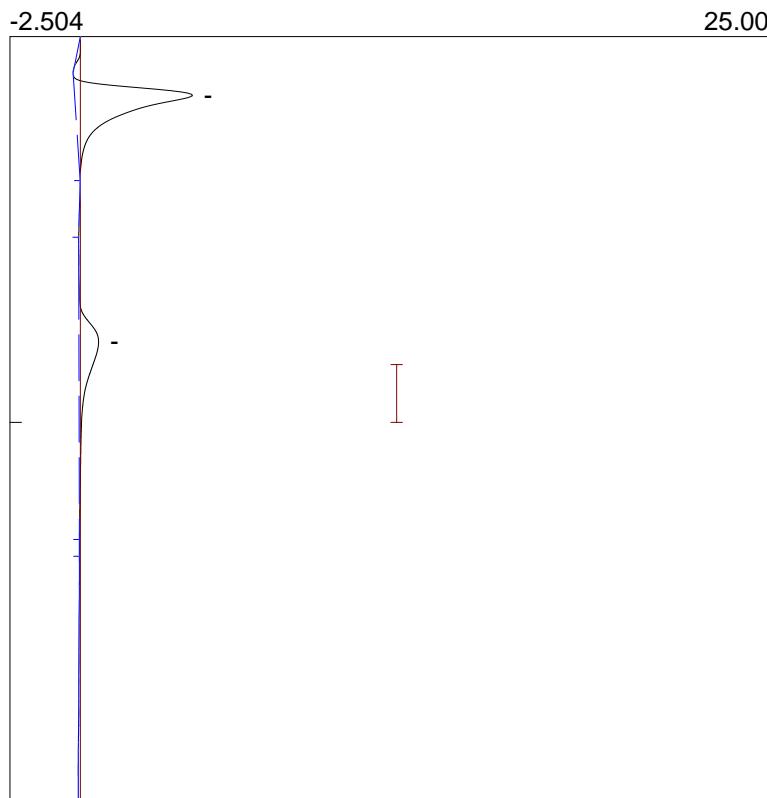
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_353.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	2432.9804
1			2432.9804

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:52:21

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_354.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:52:21

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

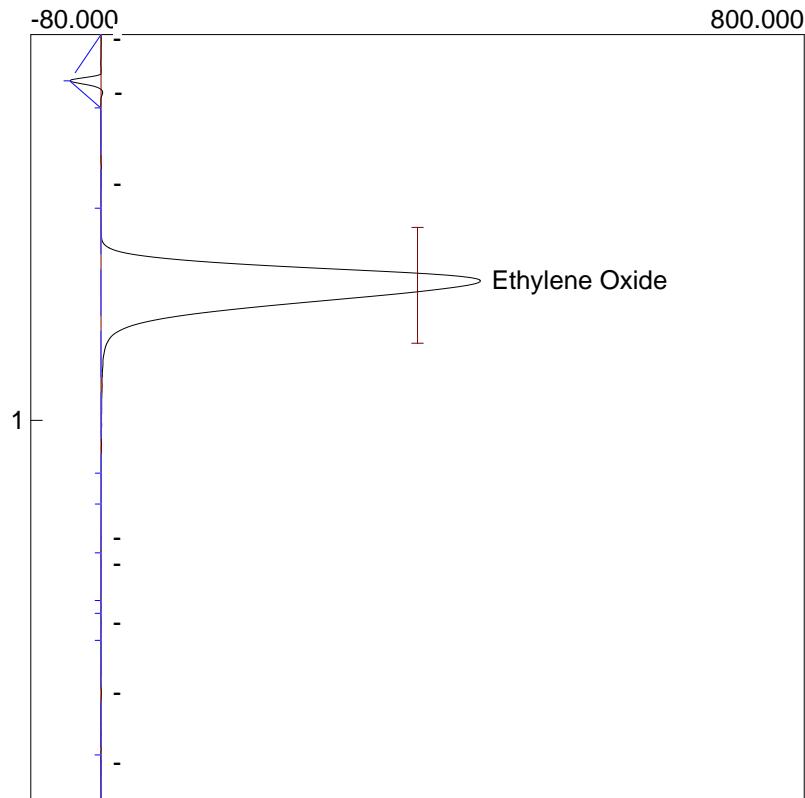
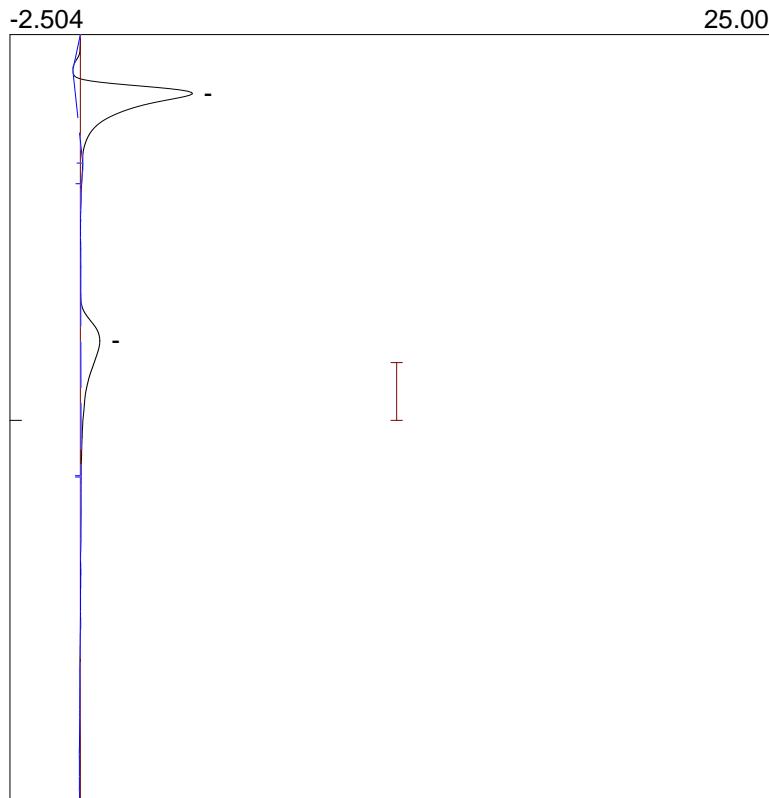
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_354.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	2676.3270
1			2676.3270

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:55:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_355.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:55:01

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

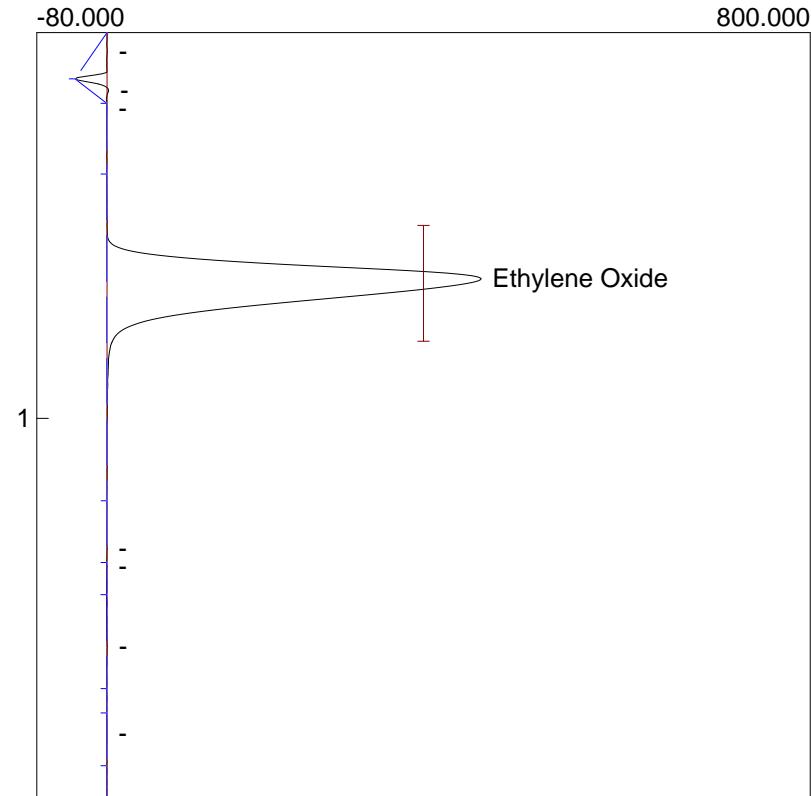
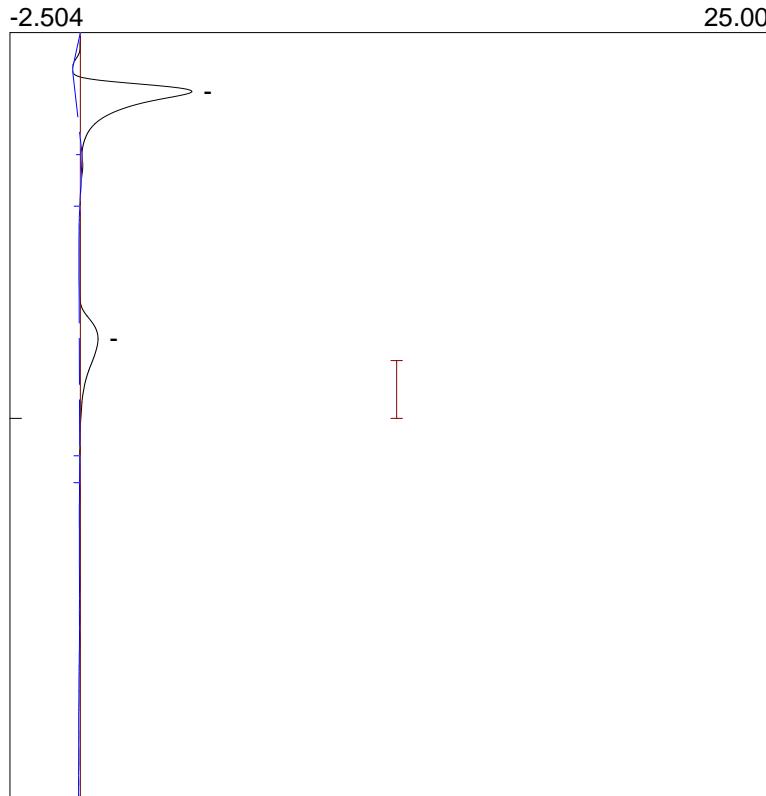
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_355.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	2636.3288
1			2636.3288

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:57:37

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_356.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 01:57:37

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

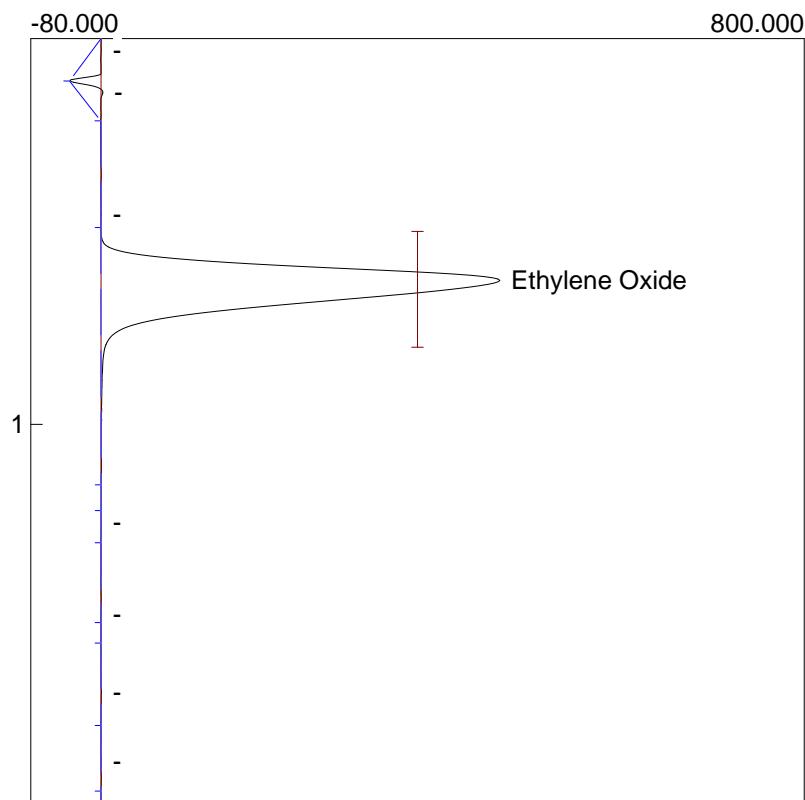
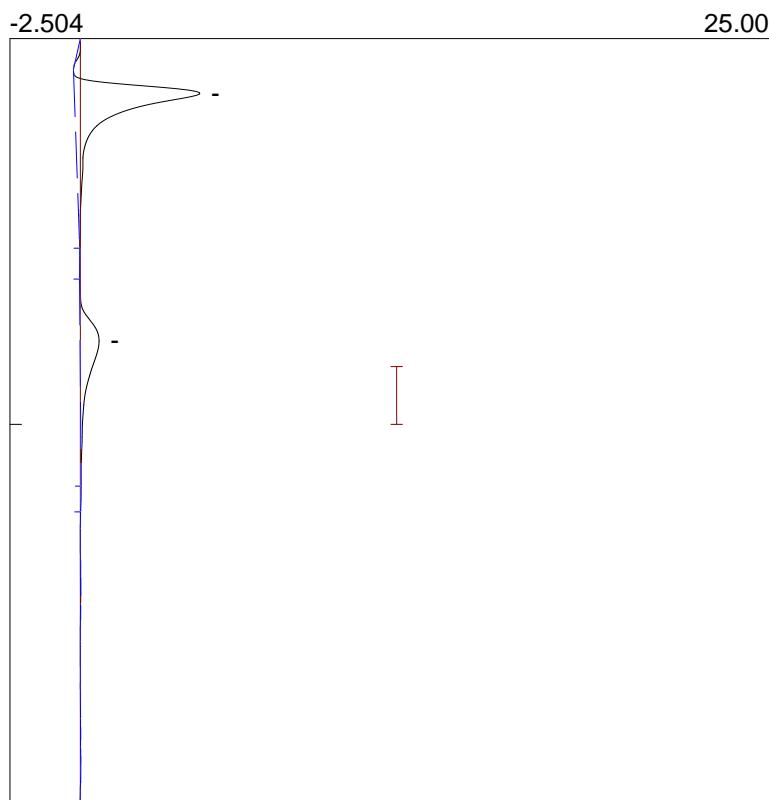
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_356.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	2801.4994
1			2801.4994

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:00:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_357.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:00:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

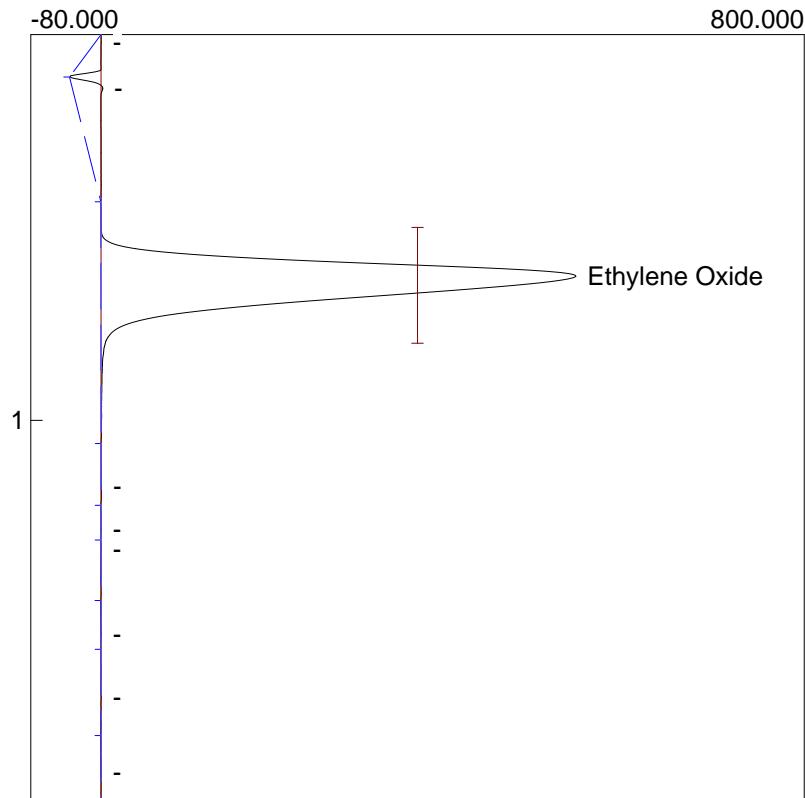
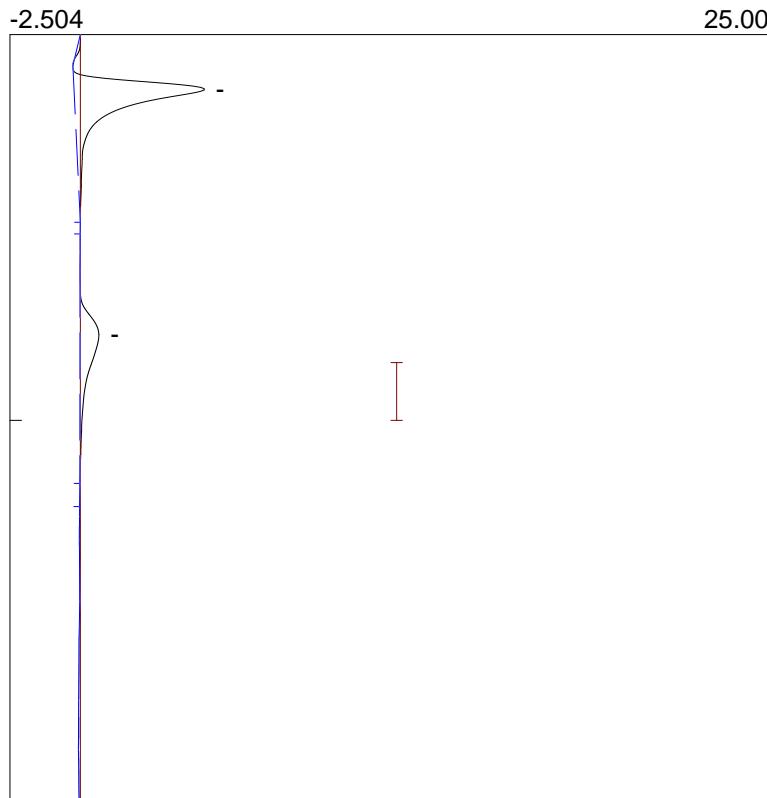
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_357.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	3331.8106
1			3331.8106

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:02:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_358.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:02:50

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

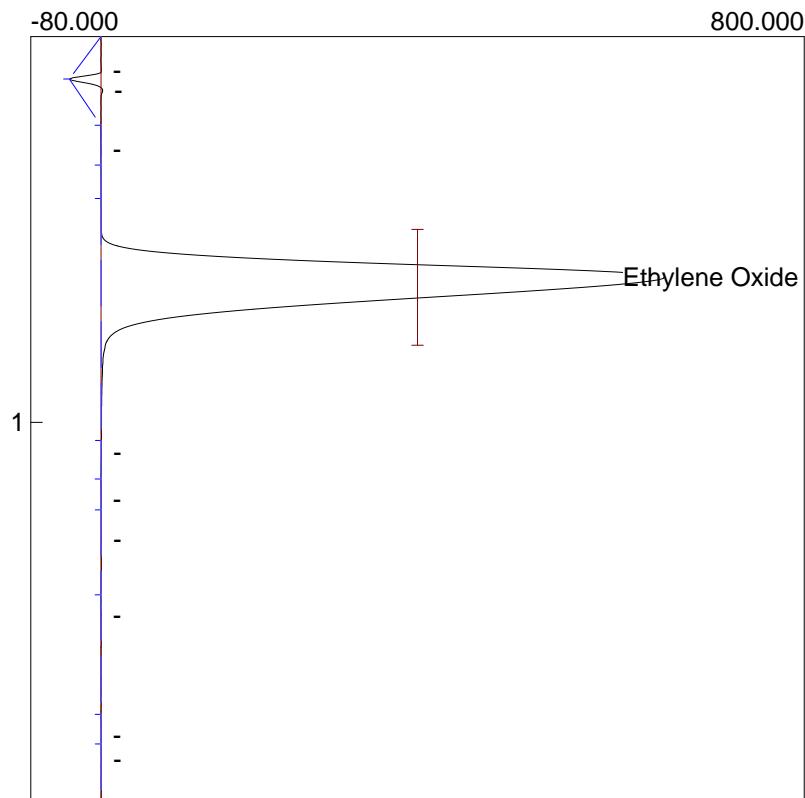
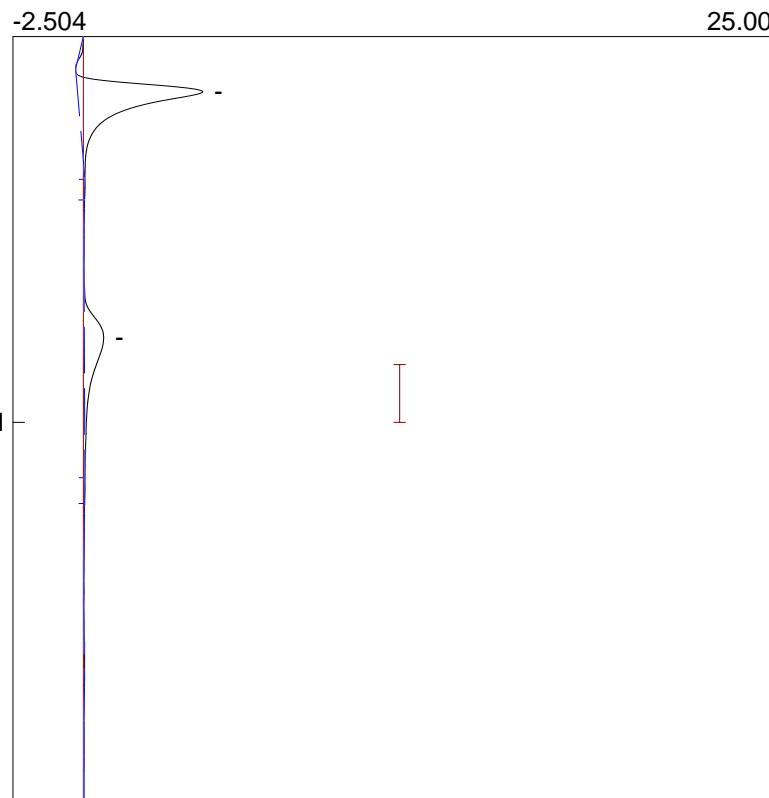
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_358.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.623	3923.5870
1			3923.5870

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:05:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_359.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:05:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

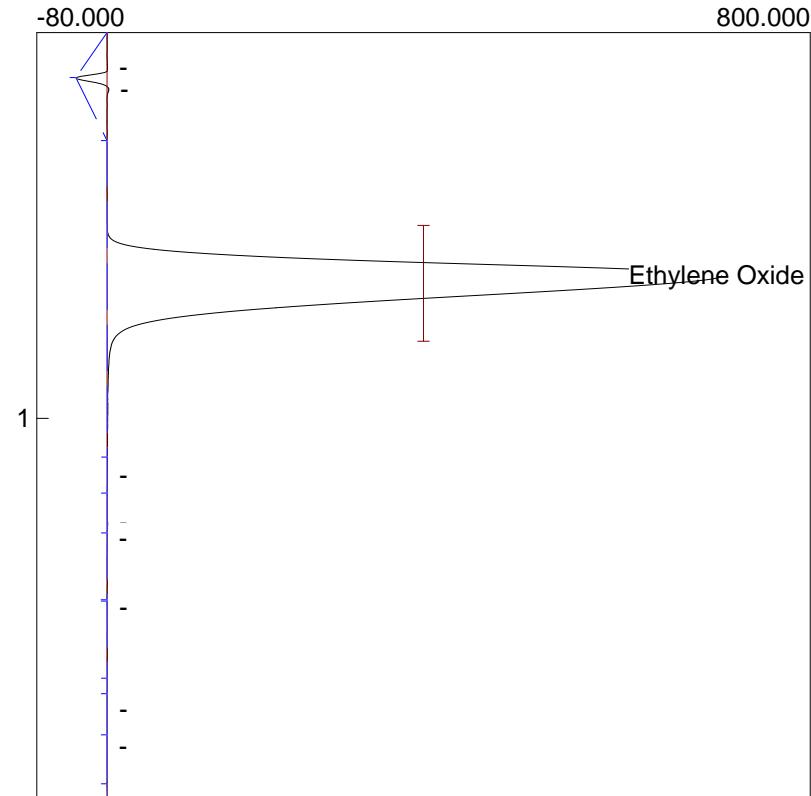
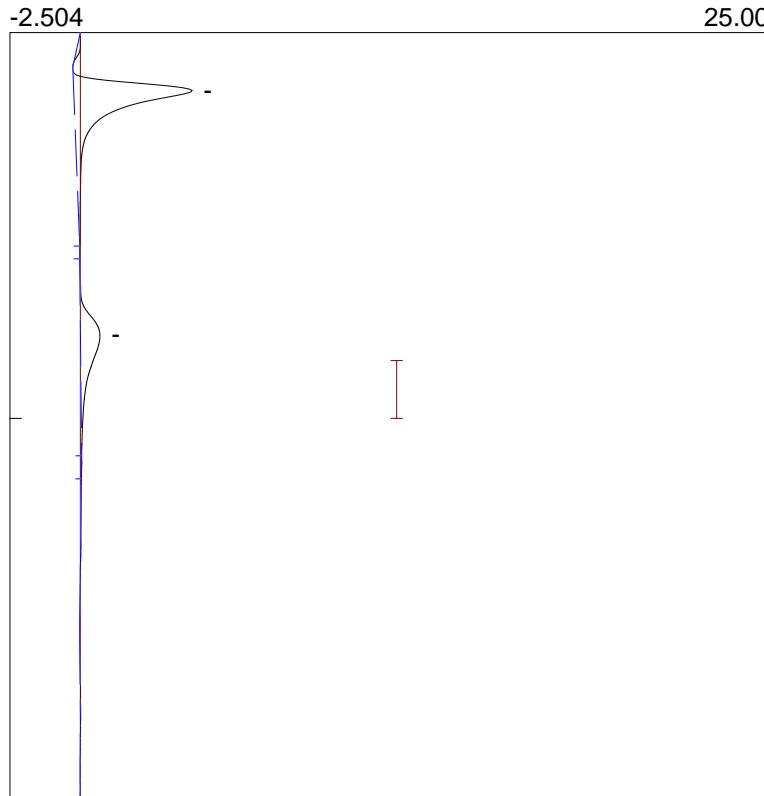
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_359.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	4284.4896
1			4284.4896

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:08:04

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_360.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:08:04

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

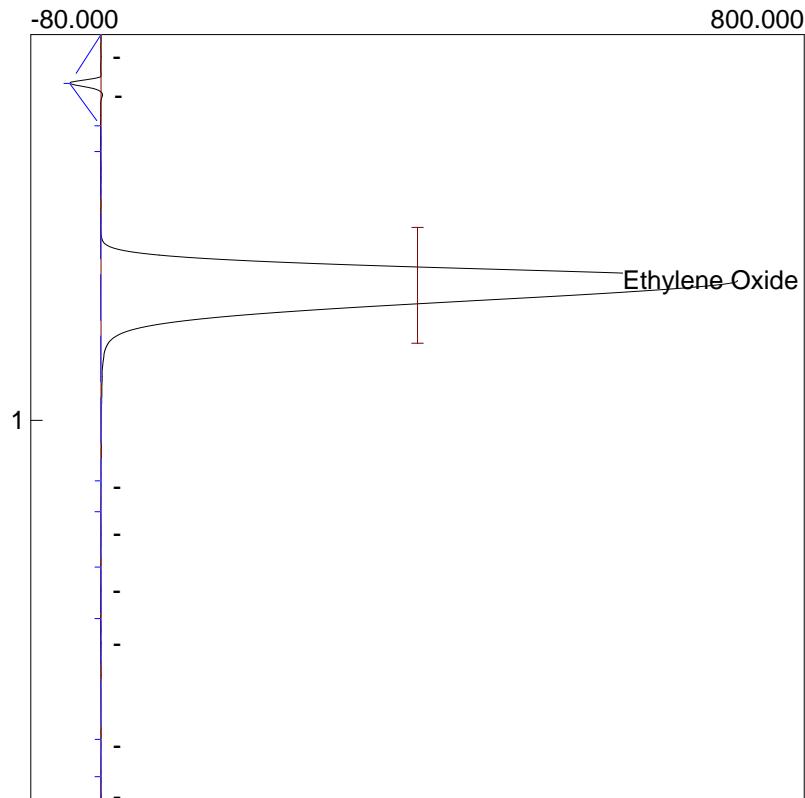
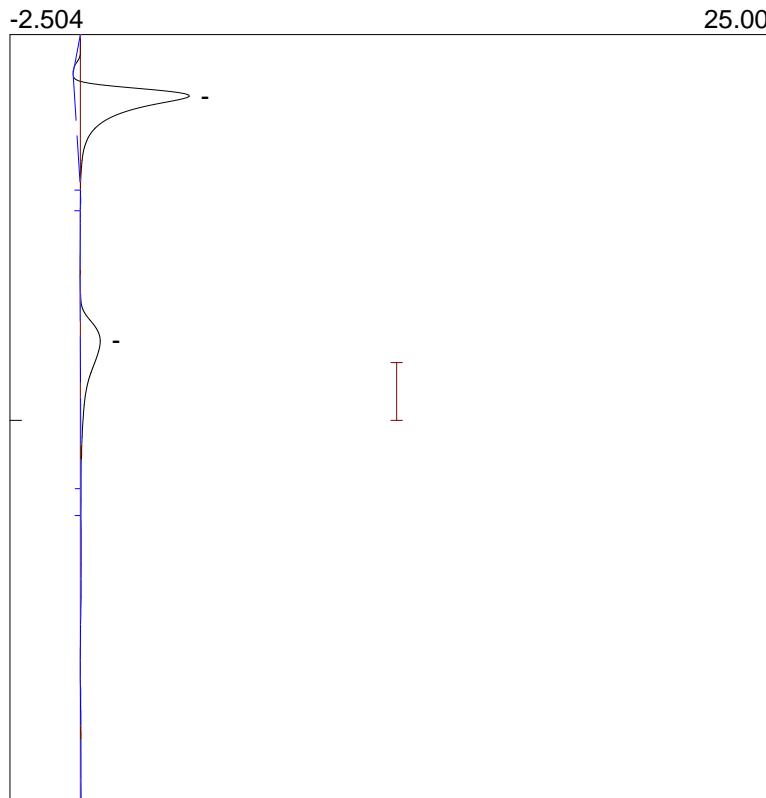
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_360.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4443.3722
1			4443.3722

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:10:40

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_361.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:10:40

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

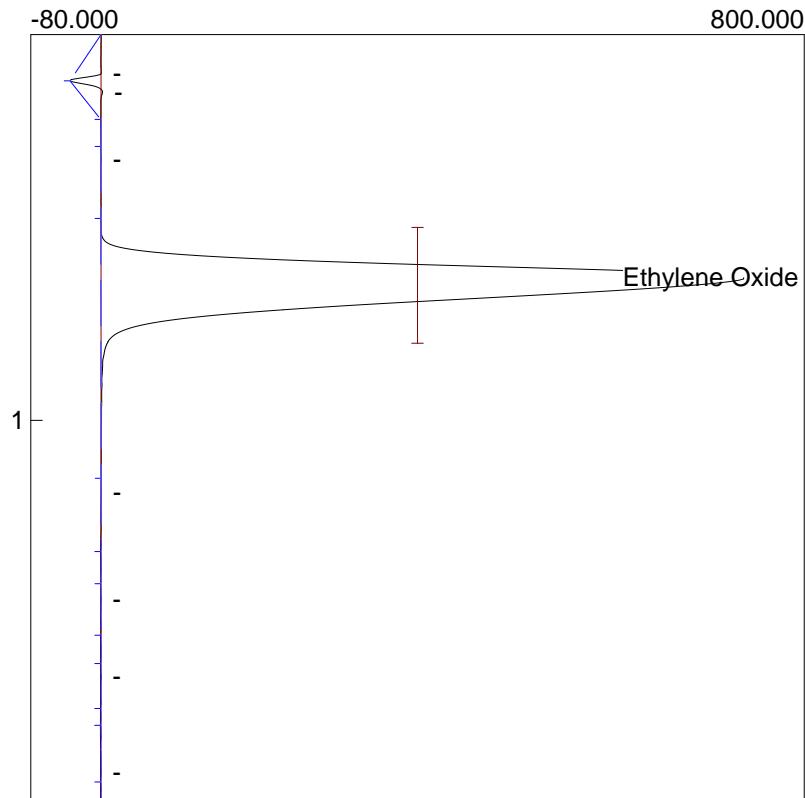
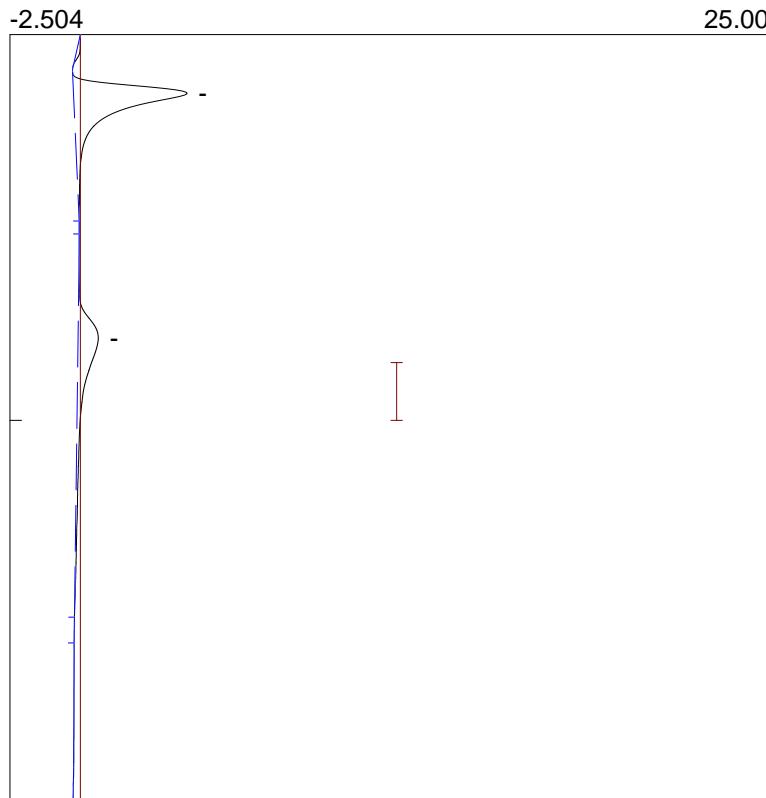
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_361.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	4482.0270
1			4482.0270

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:13:16

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_362.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:13:16

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

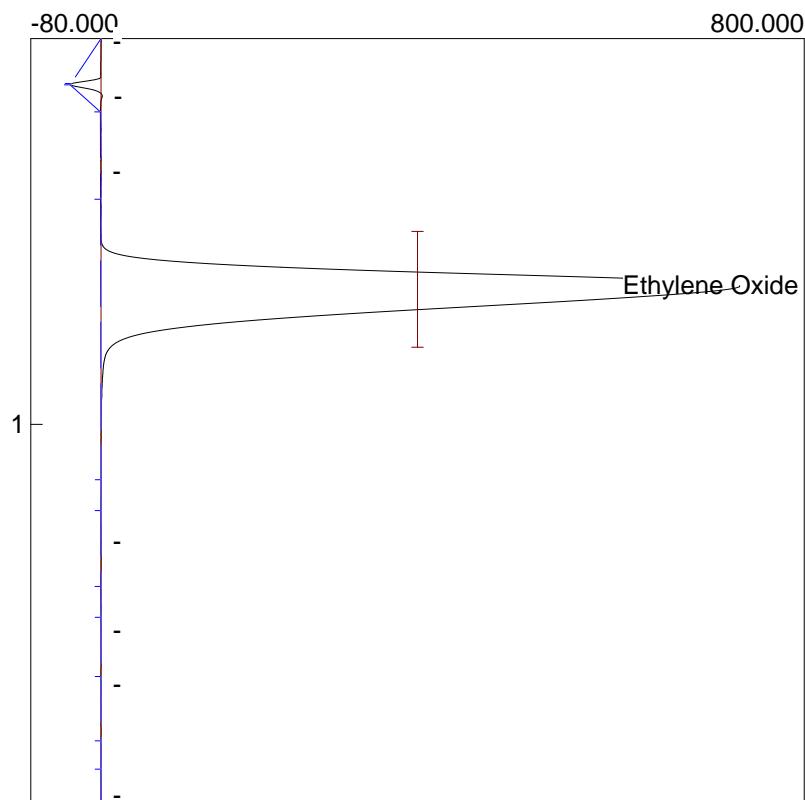
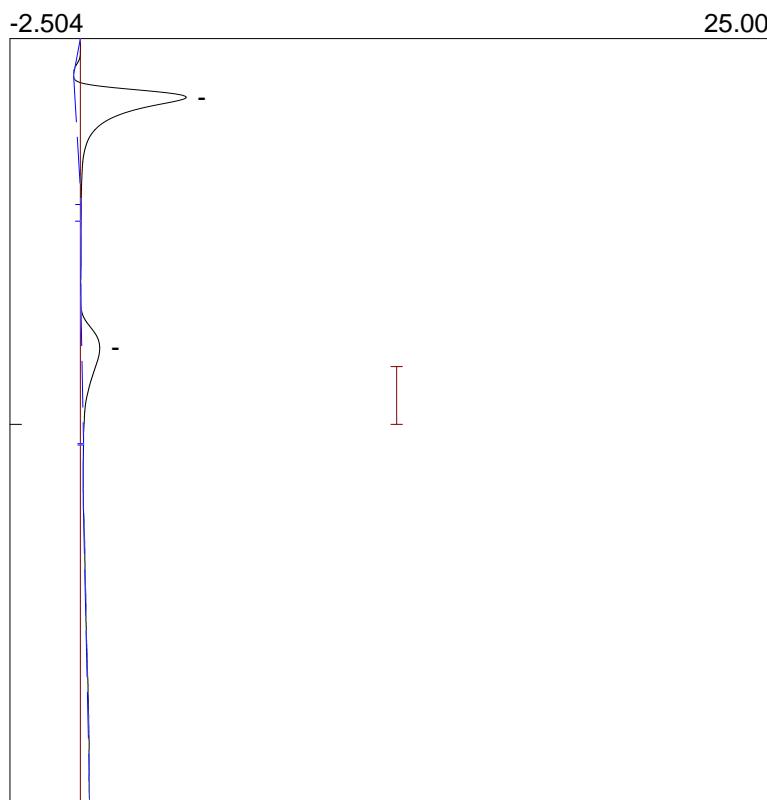
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_362.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	4546.3492
1			4546.3492

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:15:52

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_363.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:15:52

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

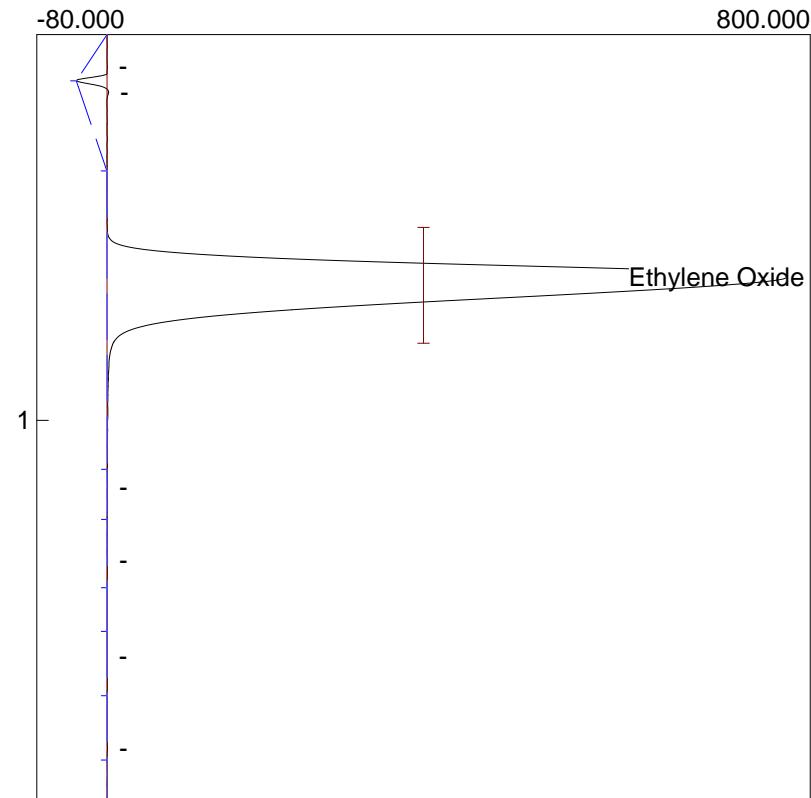
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_363.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	4755.1952
1			4755.1952

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:18:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_364.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:18:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

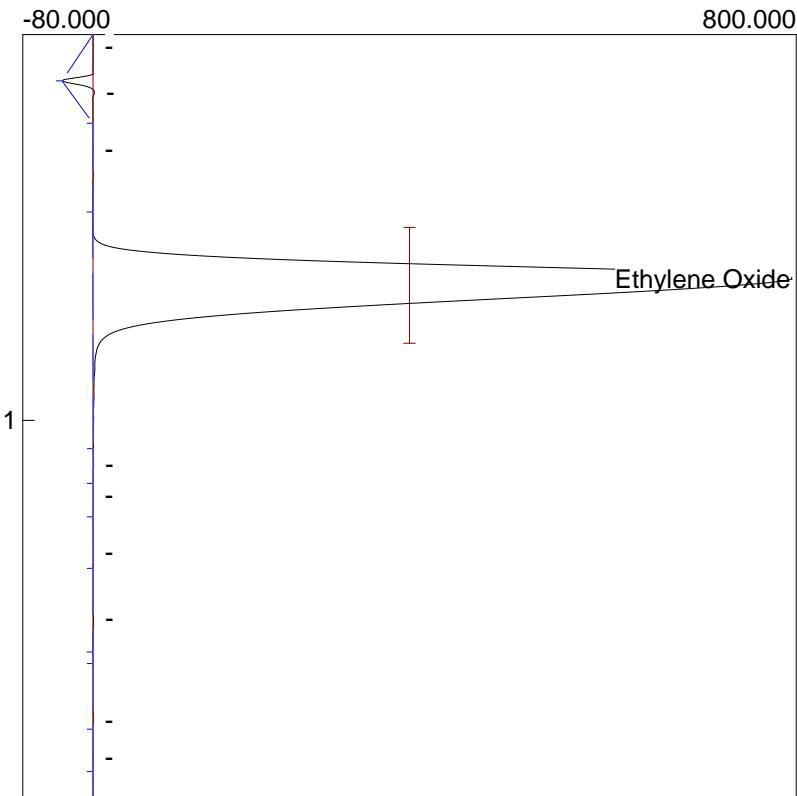
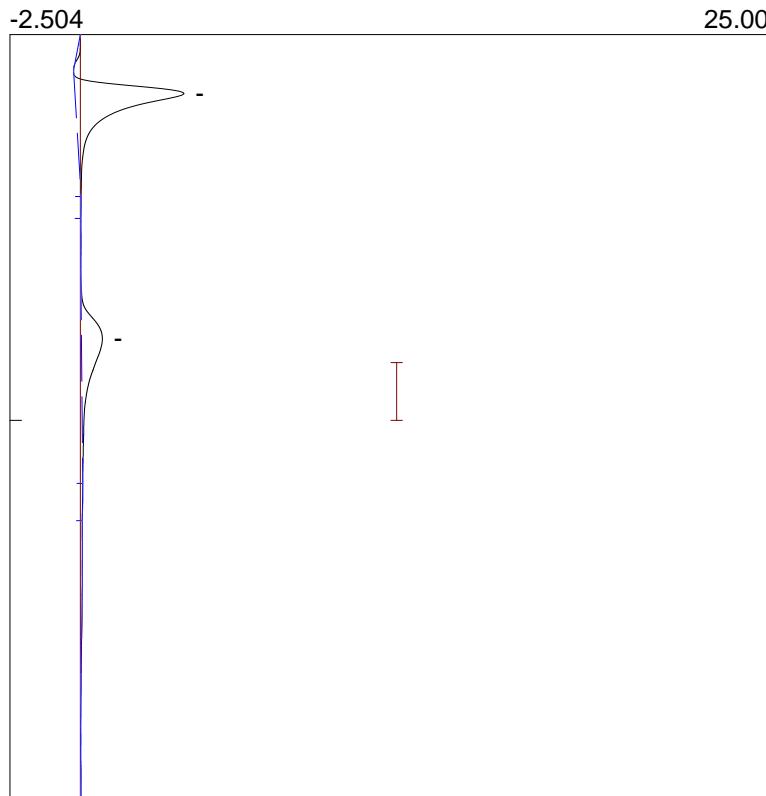
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_364.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	4909.1456
1			4909.1456

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:21:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_365.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:21:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

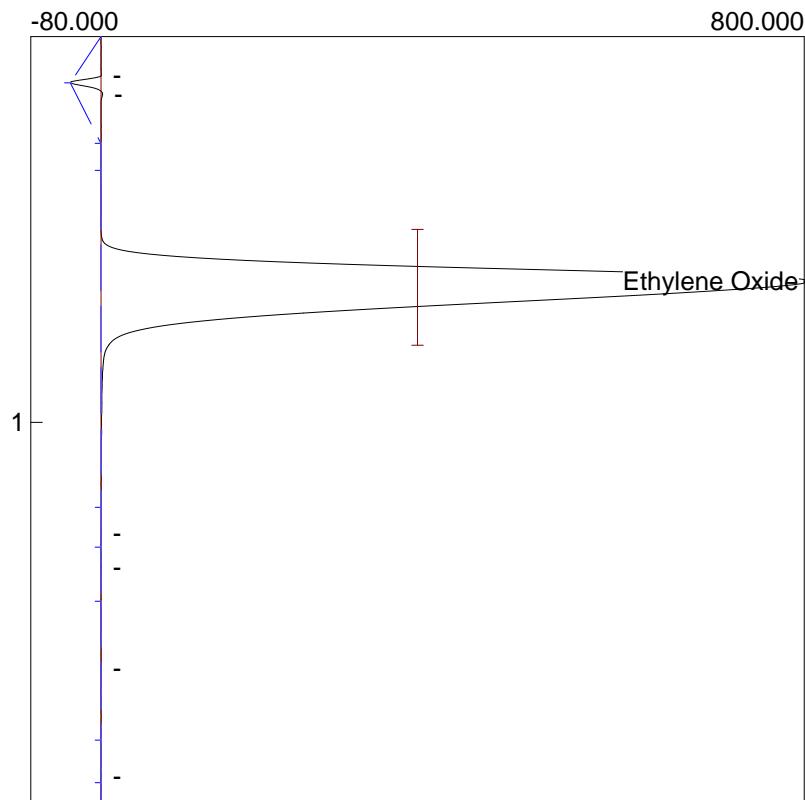
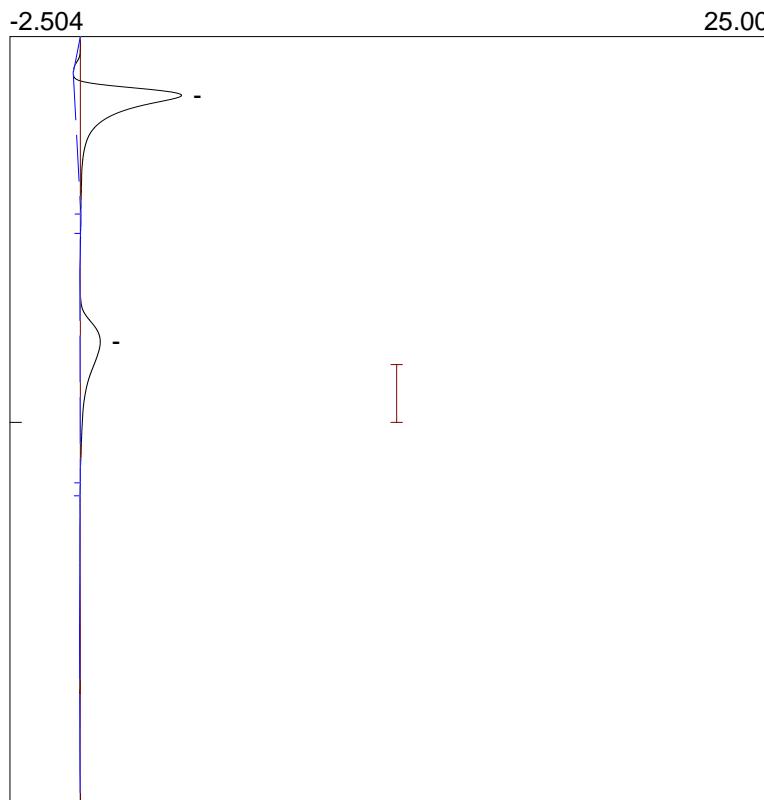
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_365.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	4989.0464
1			4989.0464

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:23:41

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_366.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:23:41

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

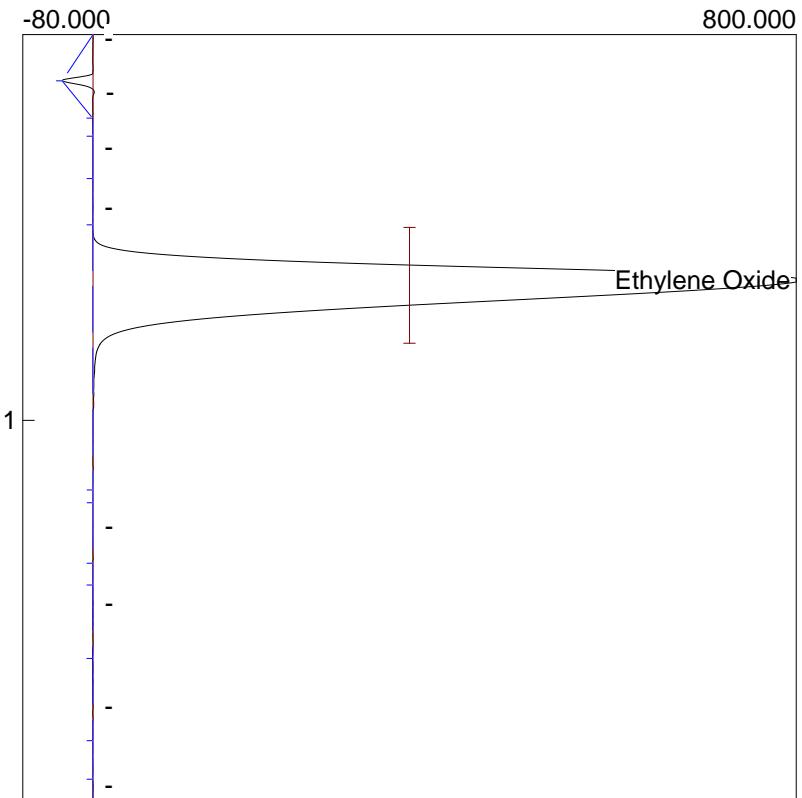
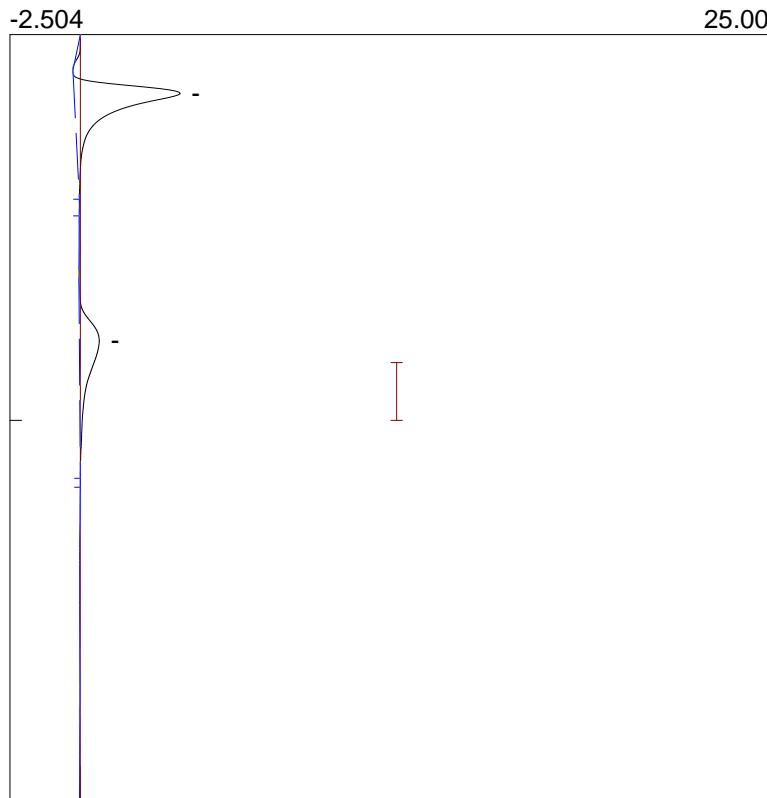
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_366.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	5005.9122
1			5005.9122

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:26:17

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_367.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:26:17

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

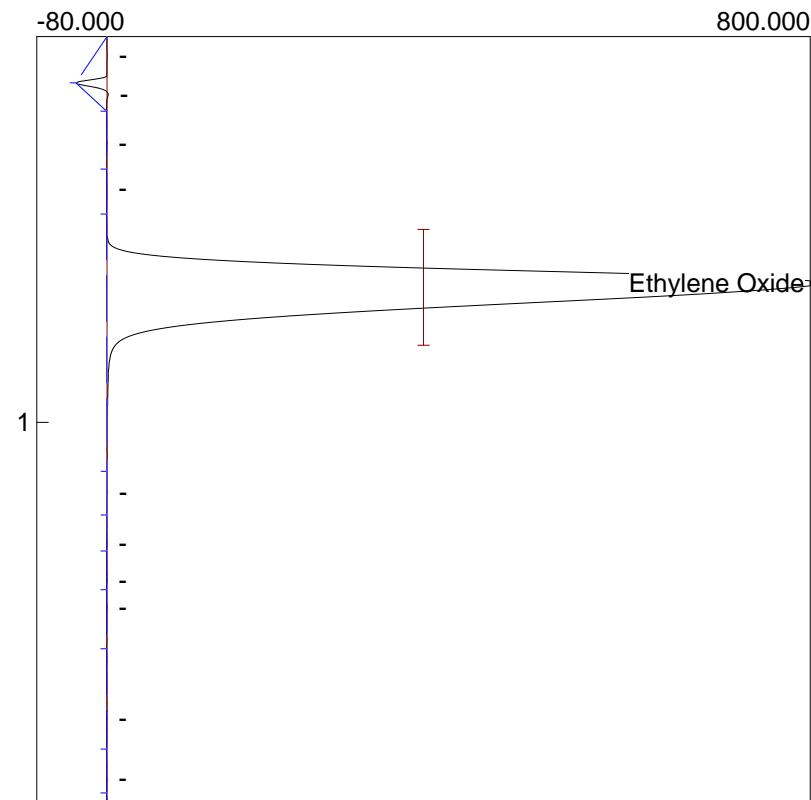
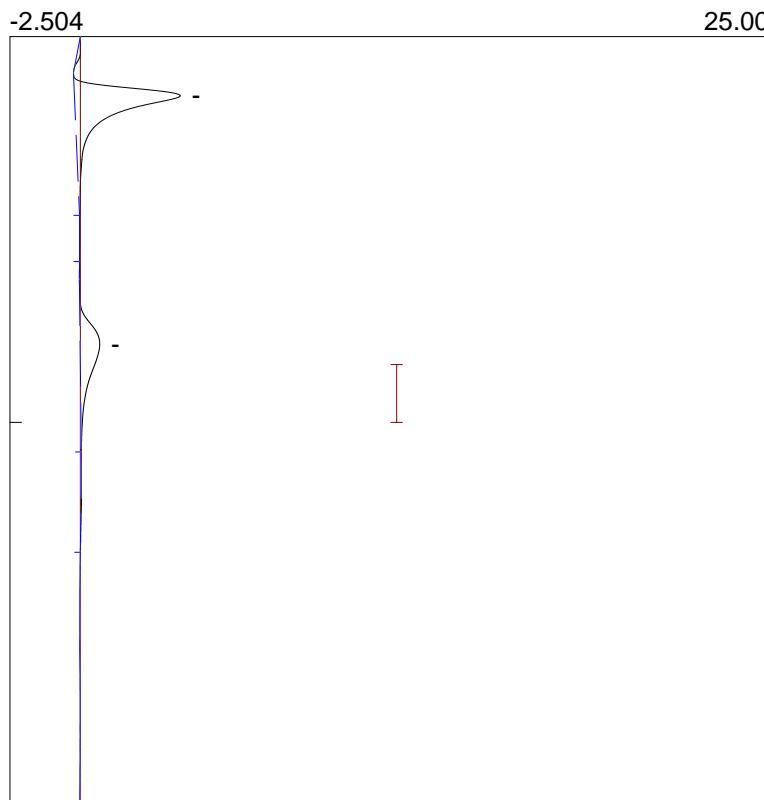
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_367.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	5009.5744
1			5009.5744

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:28:54

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_368.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 02:28:54

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

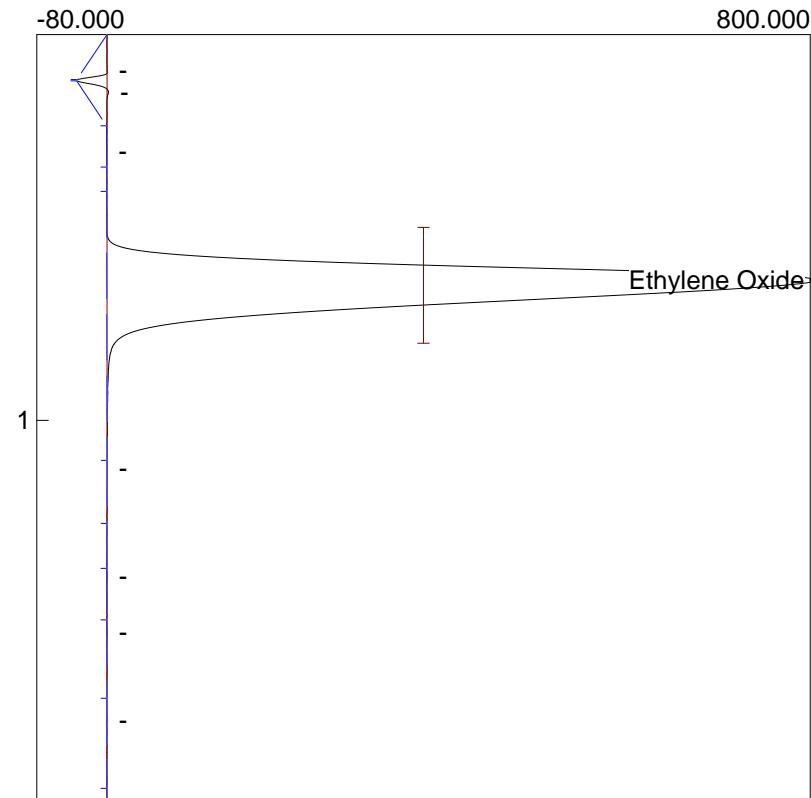
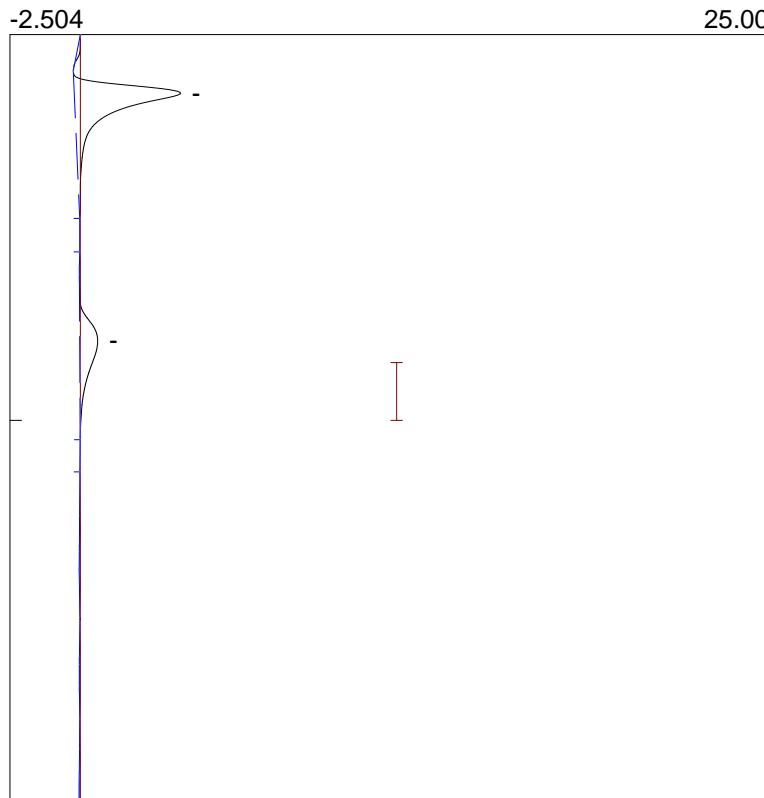
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_368.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4981.7475
1			4981.7475

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 12:55:43

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_609.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 12:55:43

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

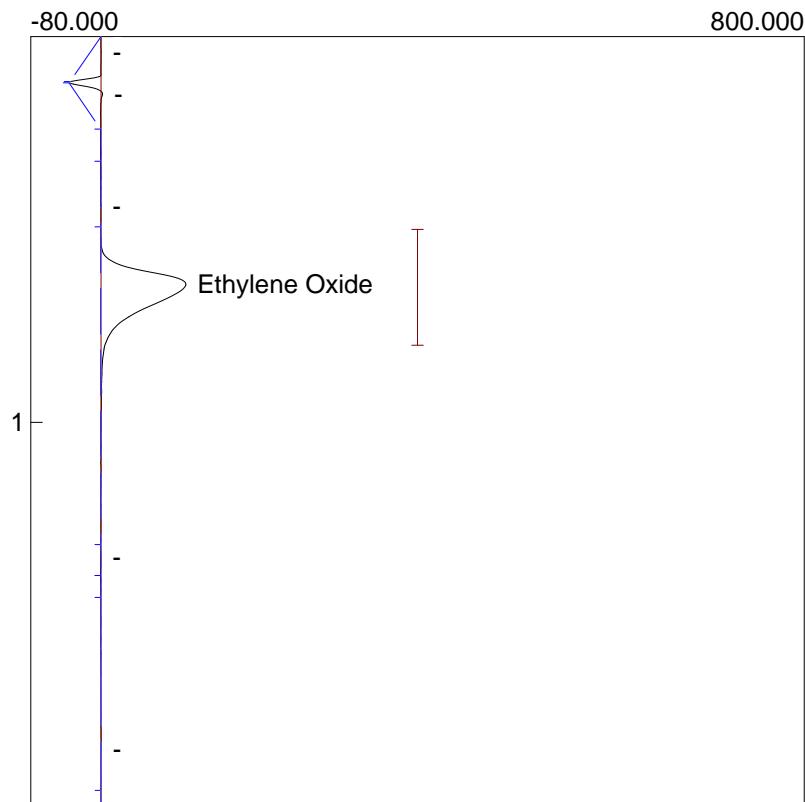
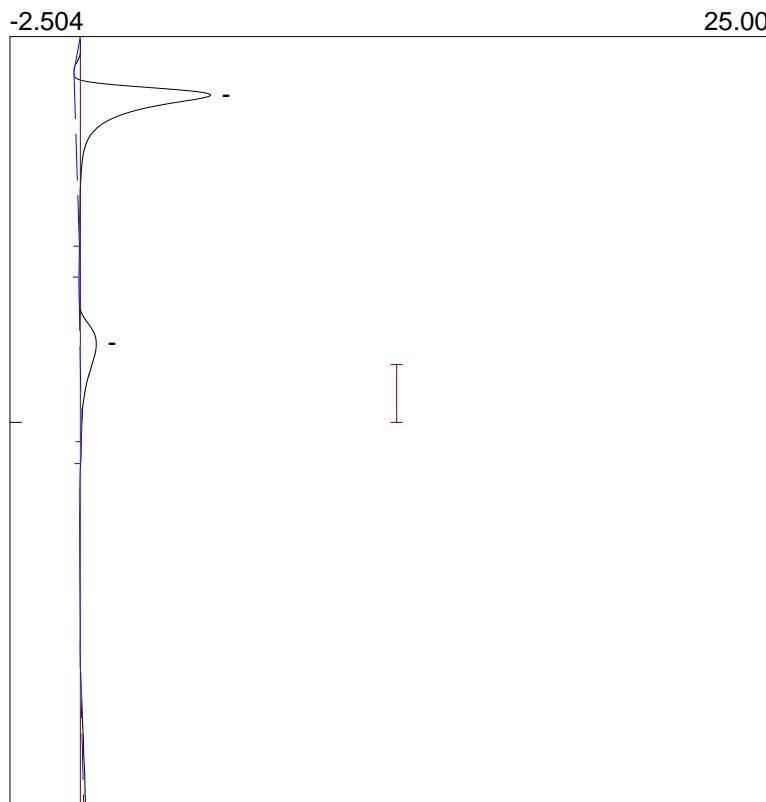
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_609.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	655.9649
1			655.9649

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 12:58:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_610.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 12:58:19

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

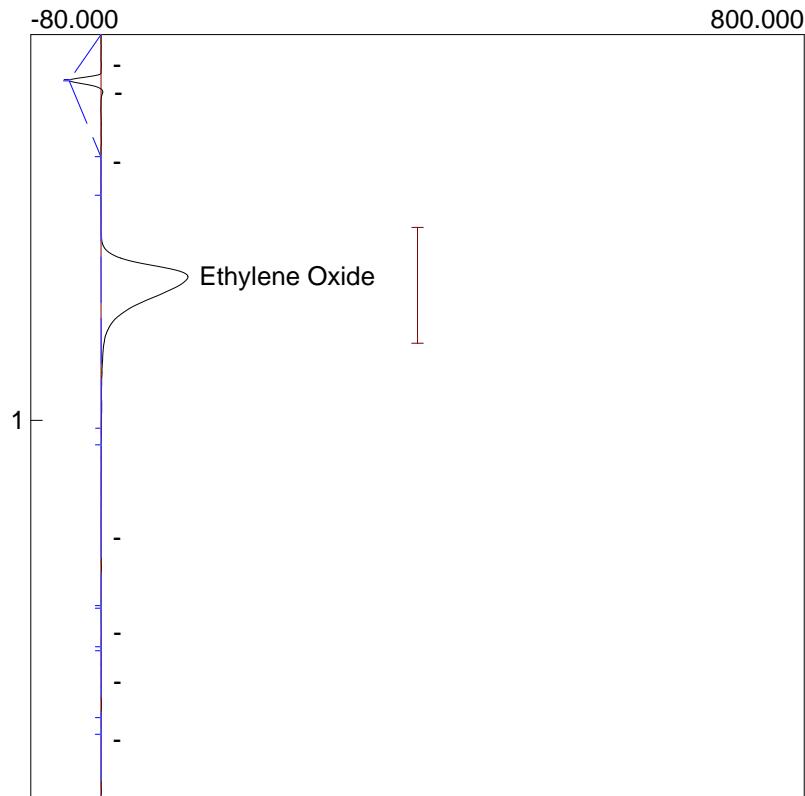
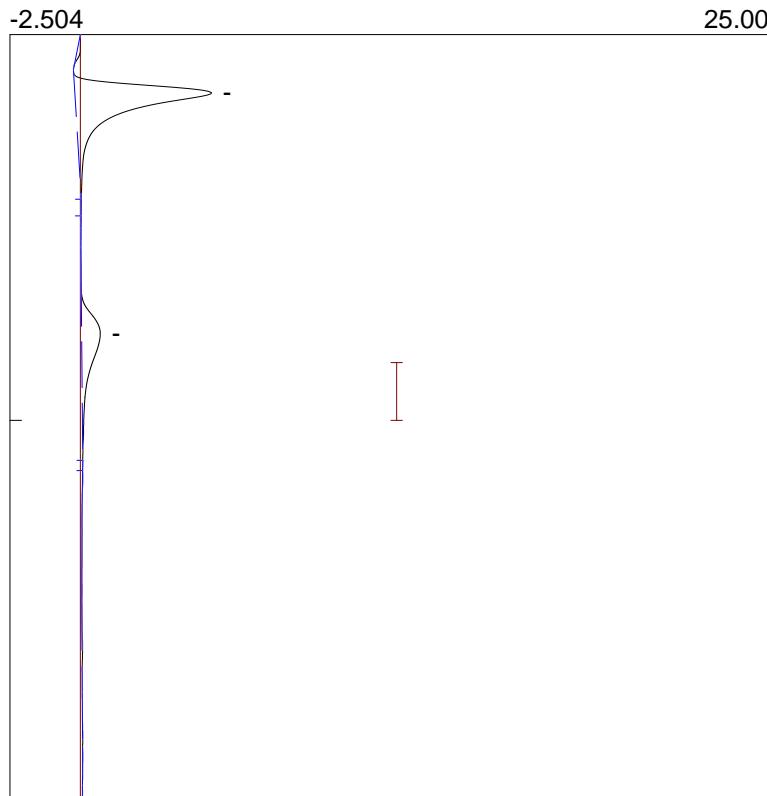
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_610.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	642.4226
1			642.4226

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:00:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_611.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:00:58

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

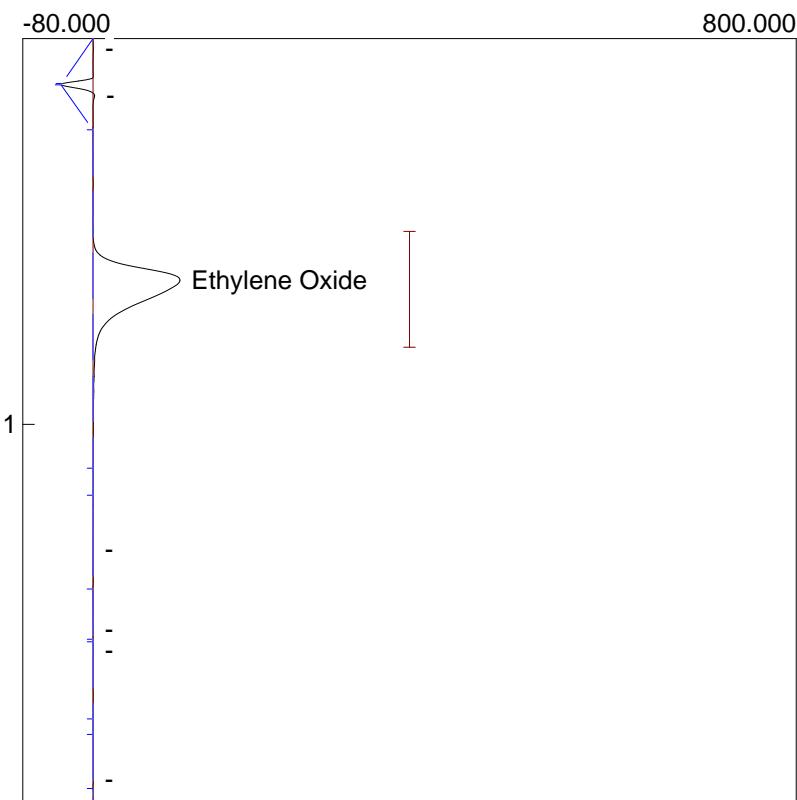
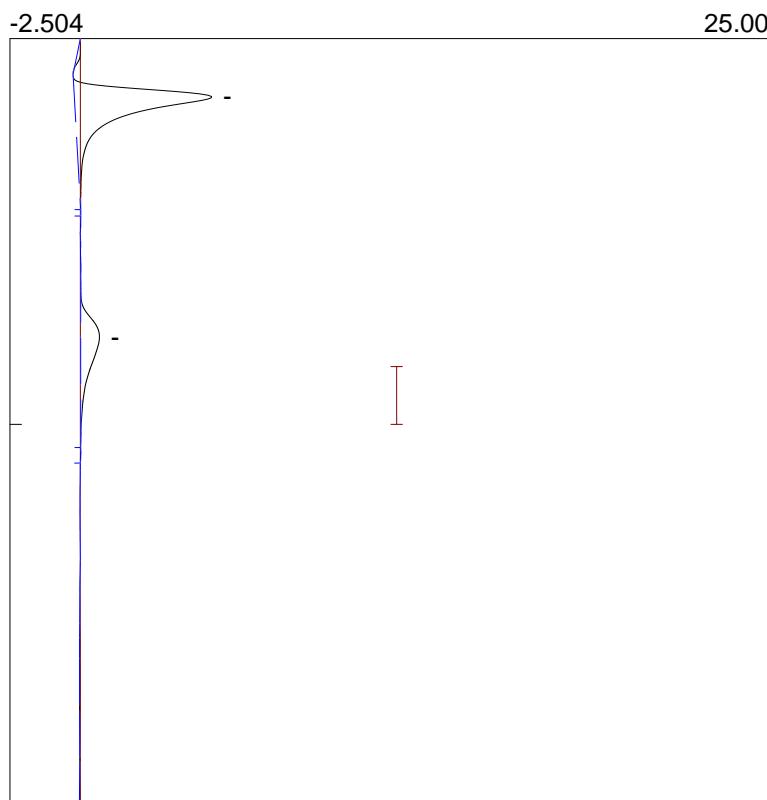
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_611.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	646.2174
1			646.2174

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:03:34

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_612.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:03:34

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

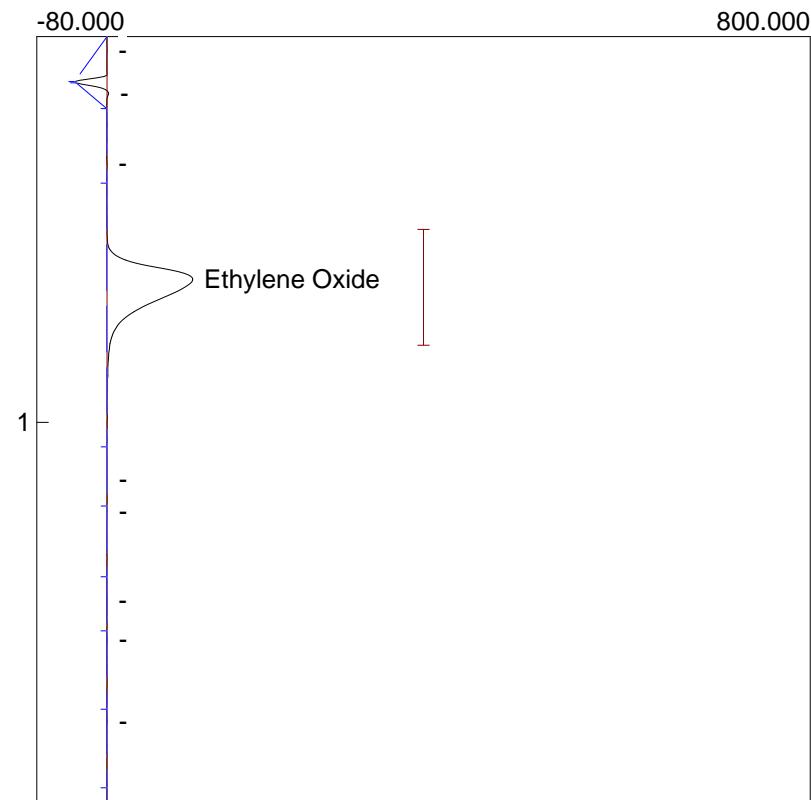
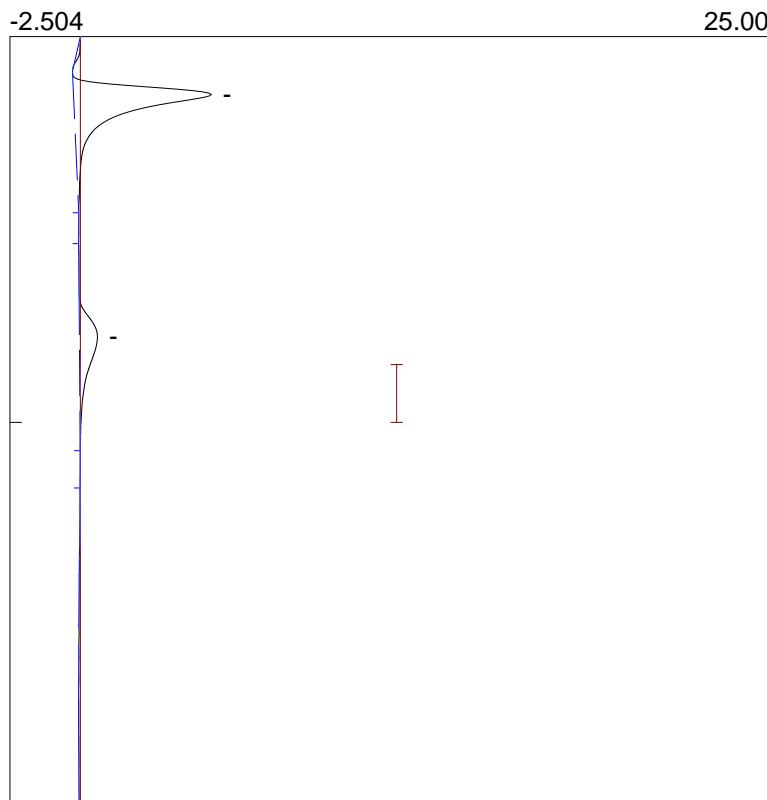
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_612.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	643.0565
1			643.0565

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:06:10

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_613.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:06:10

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

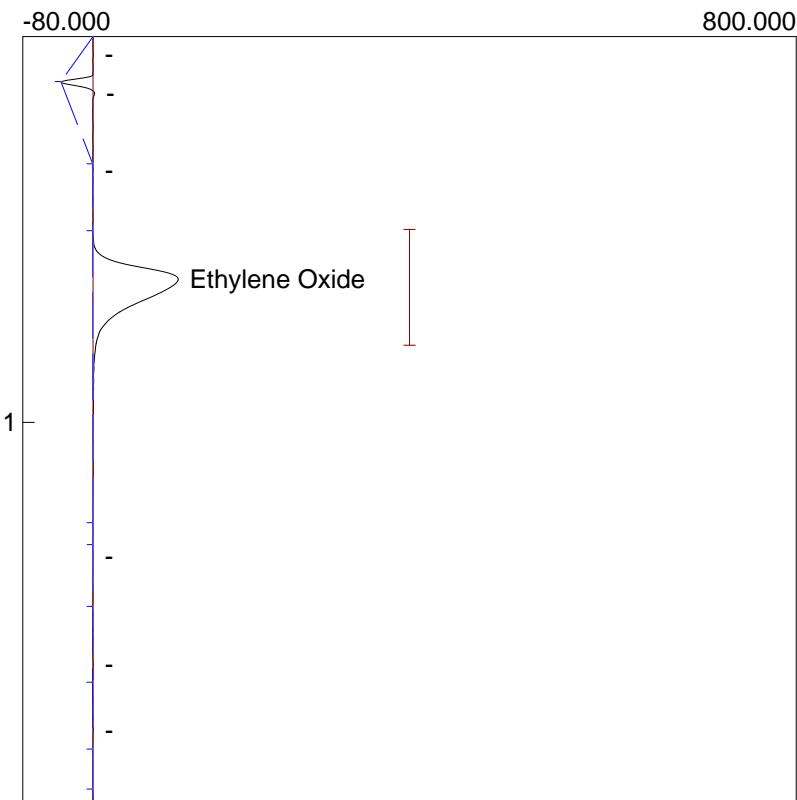
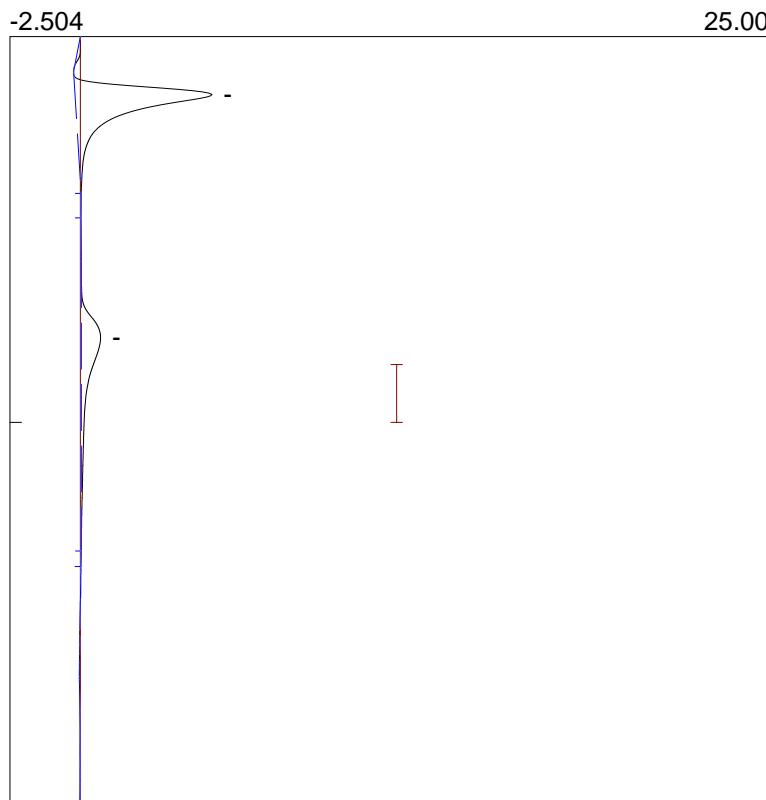
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_613.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	641.3849
1			641.3849

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:08:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_614.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:08:47

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

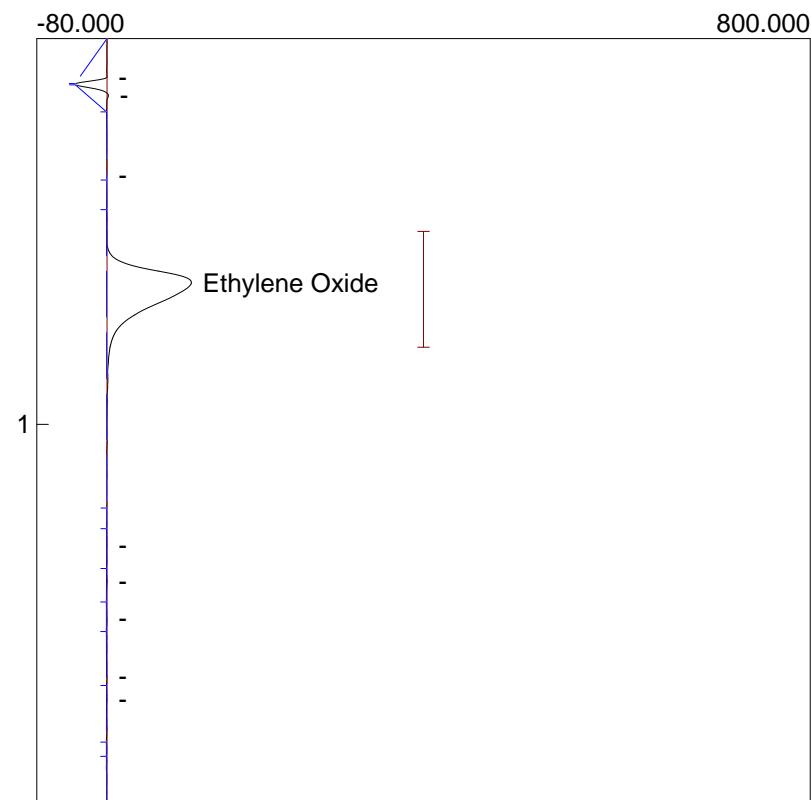
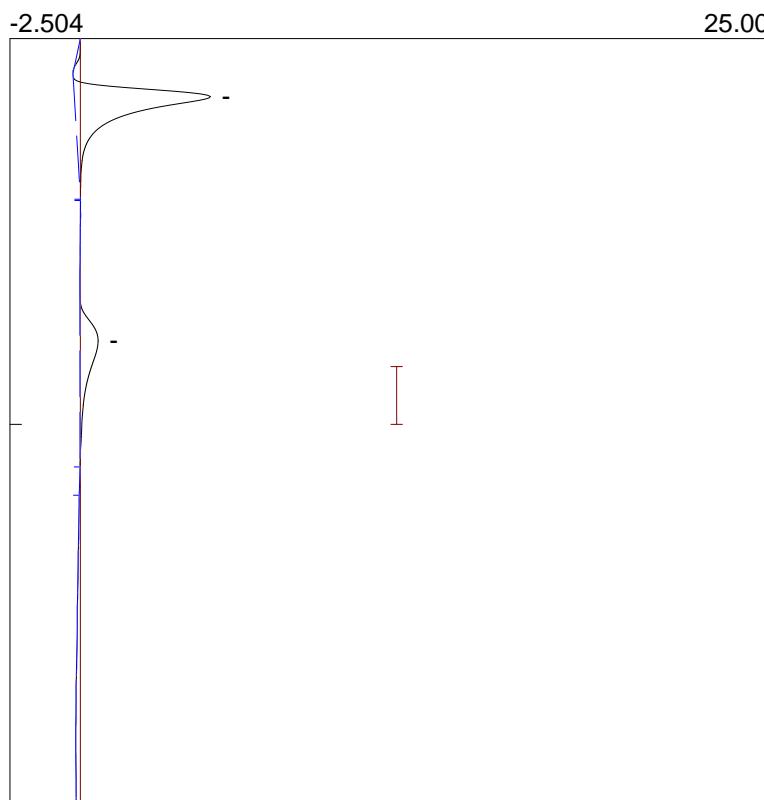
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_614.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	645.4192
1			645.4192

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:11:23

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_615.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:11:23

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

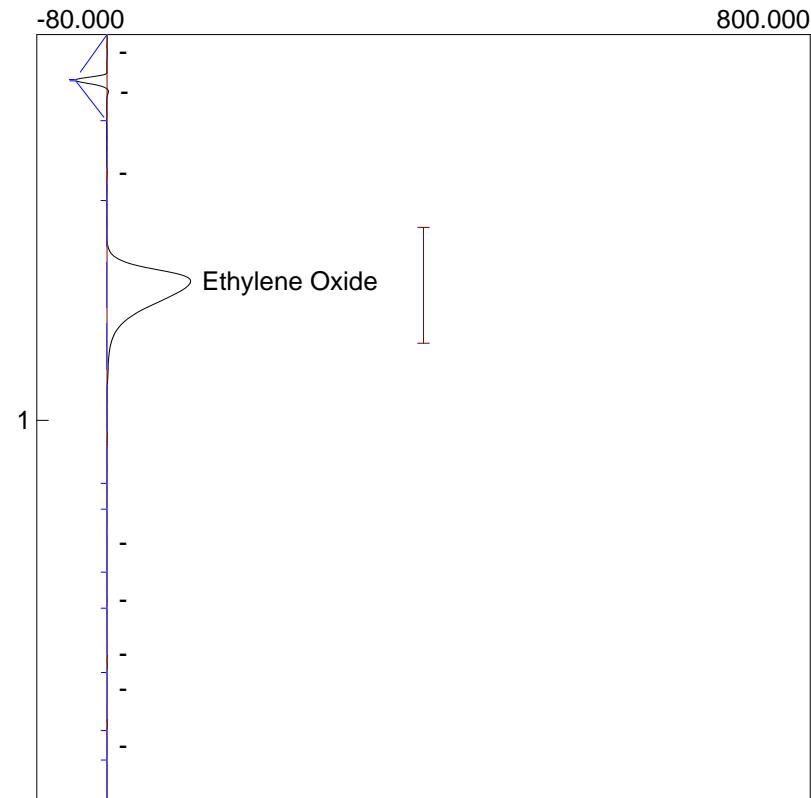
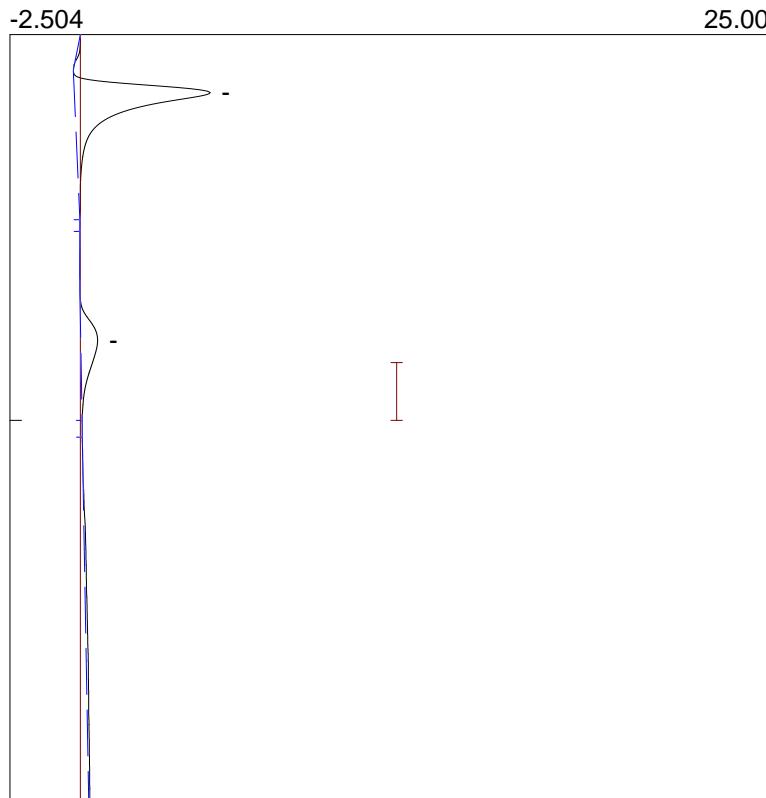
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_615.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.640	642.4018
1			642.4018

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:13:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_616.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:13:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

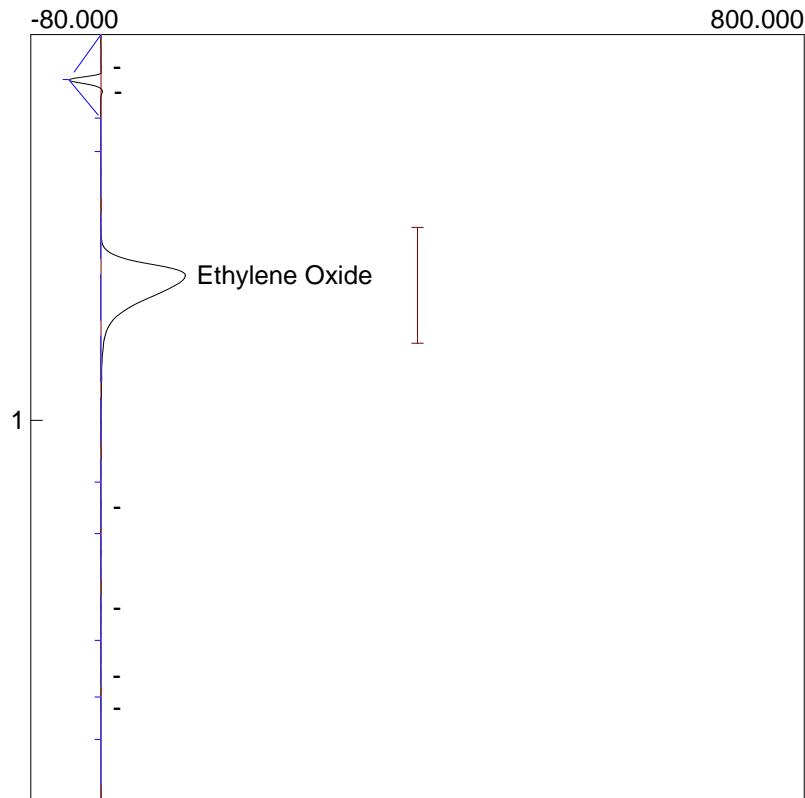
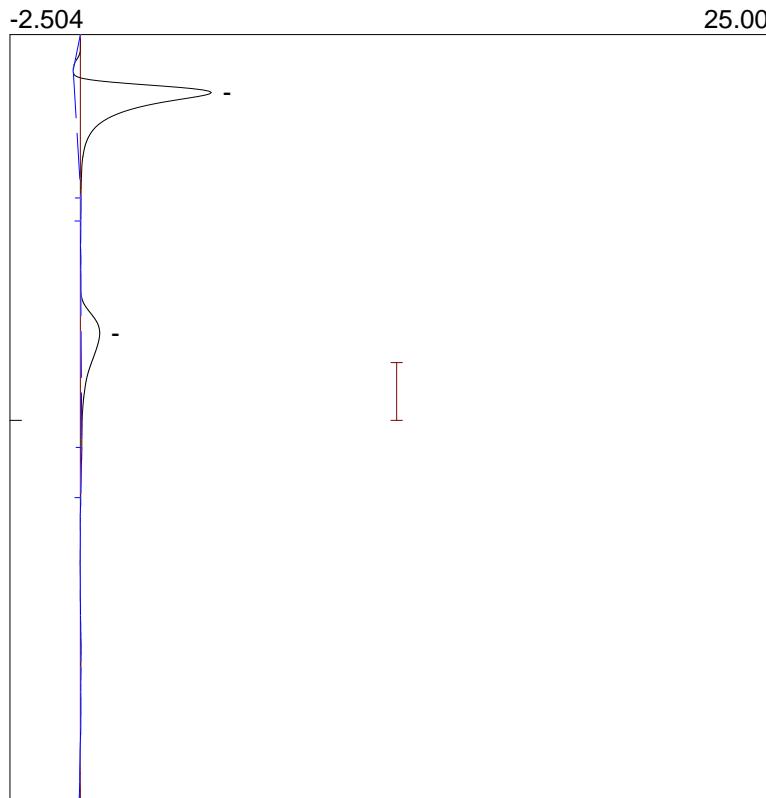
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_616.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.623	639.8298
1			639.8298

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:16:35

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_617.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:16:35

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

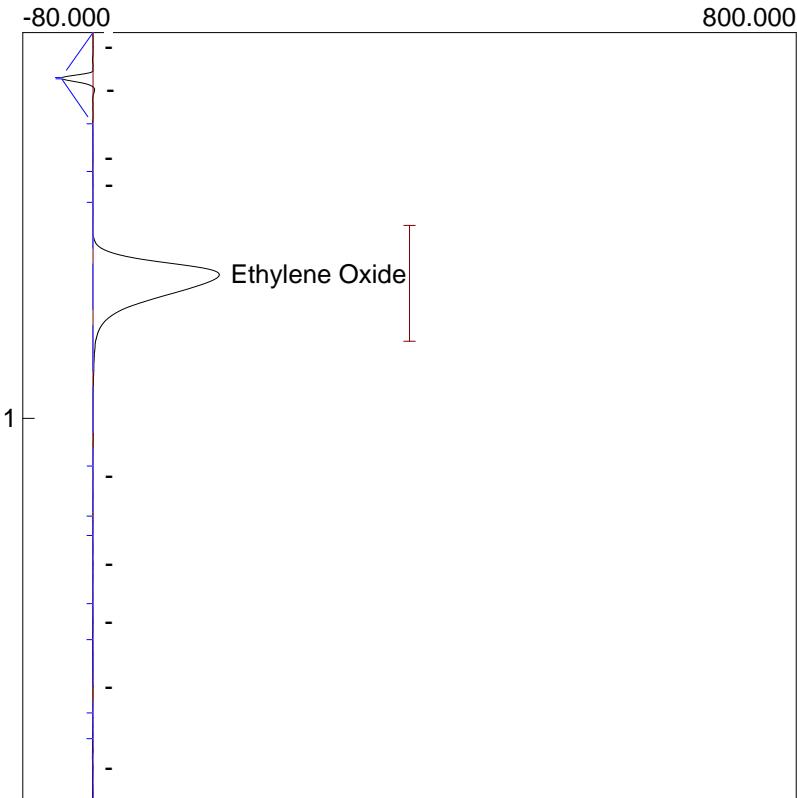
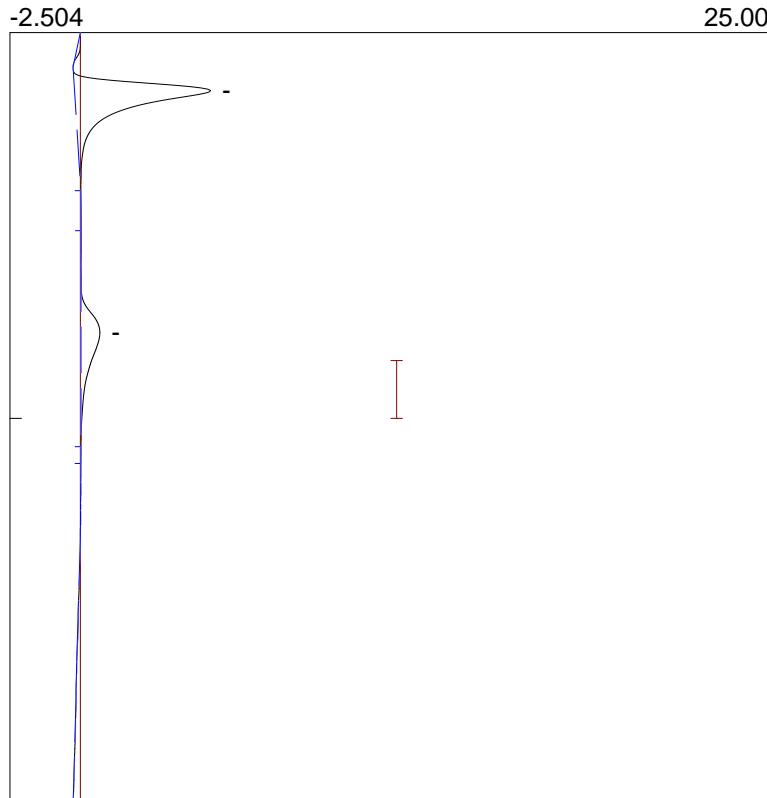
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_617.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	909.6024
1			909.6024

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:19:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_618.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:19:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

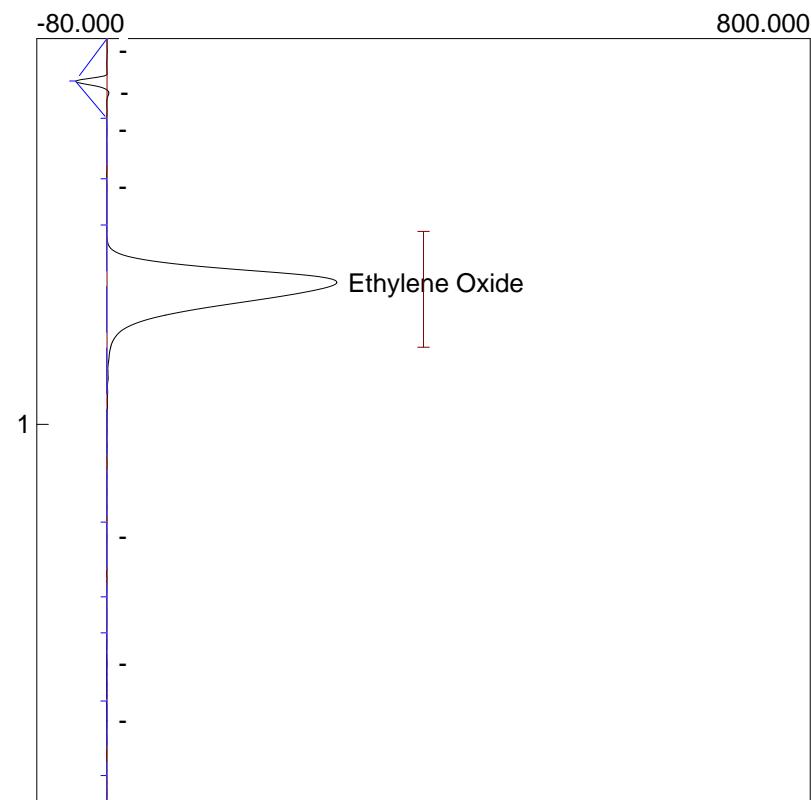
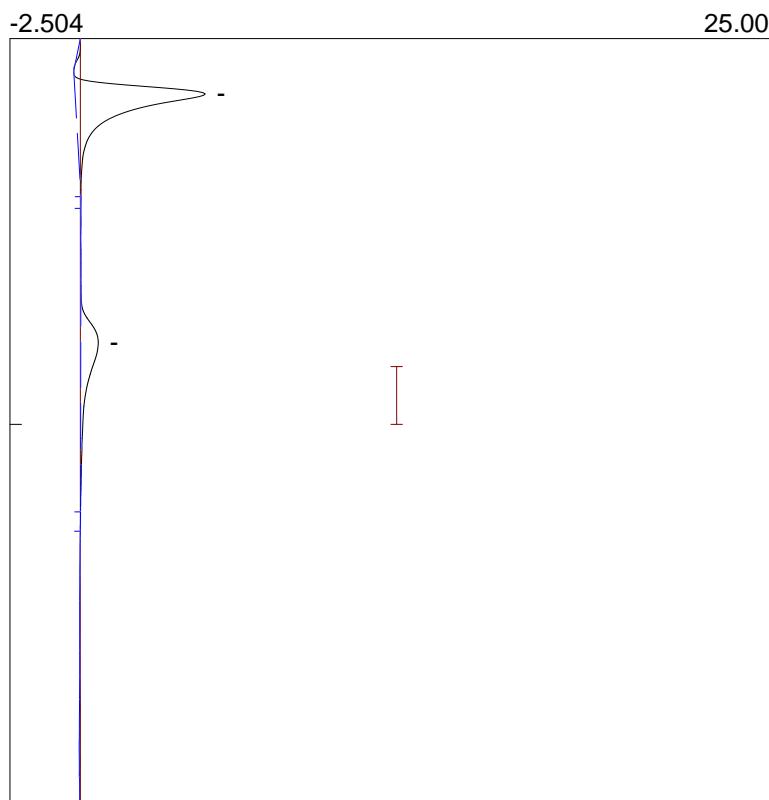
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_618.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	1645.1537
1			1645.1537

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:21:48

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_619.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:21:48

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

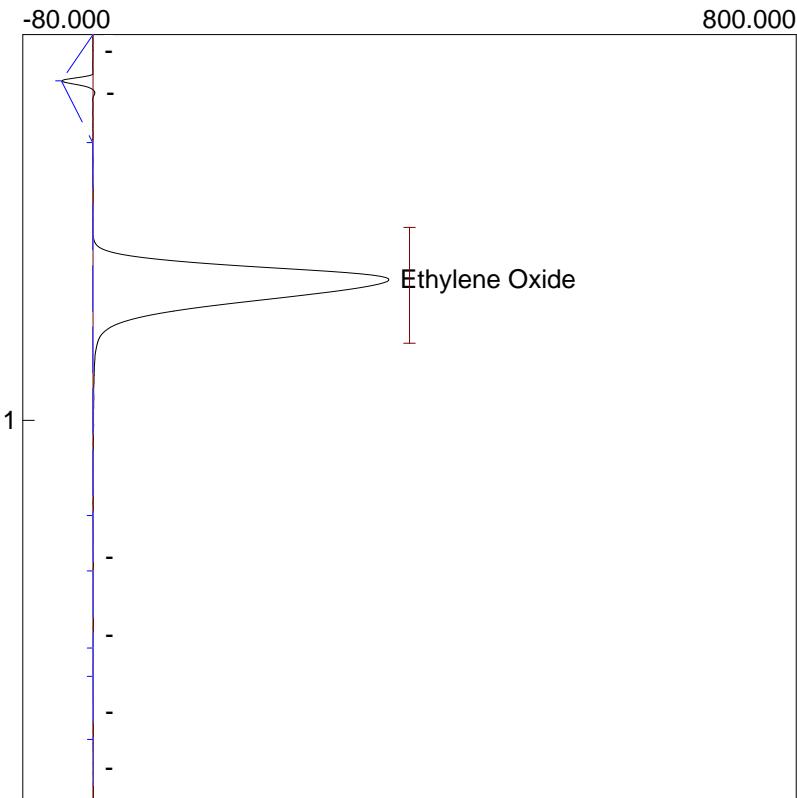
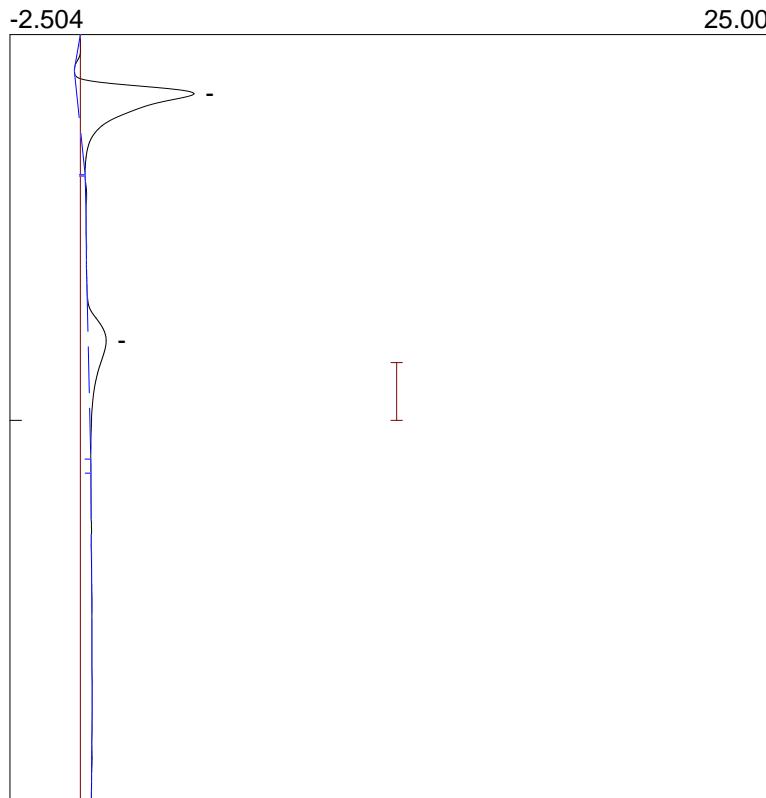
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_619.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	2084.2216
1			2084.2216

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:24:29

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_620.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:24:29

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

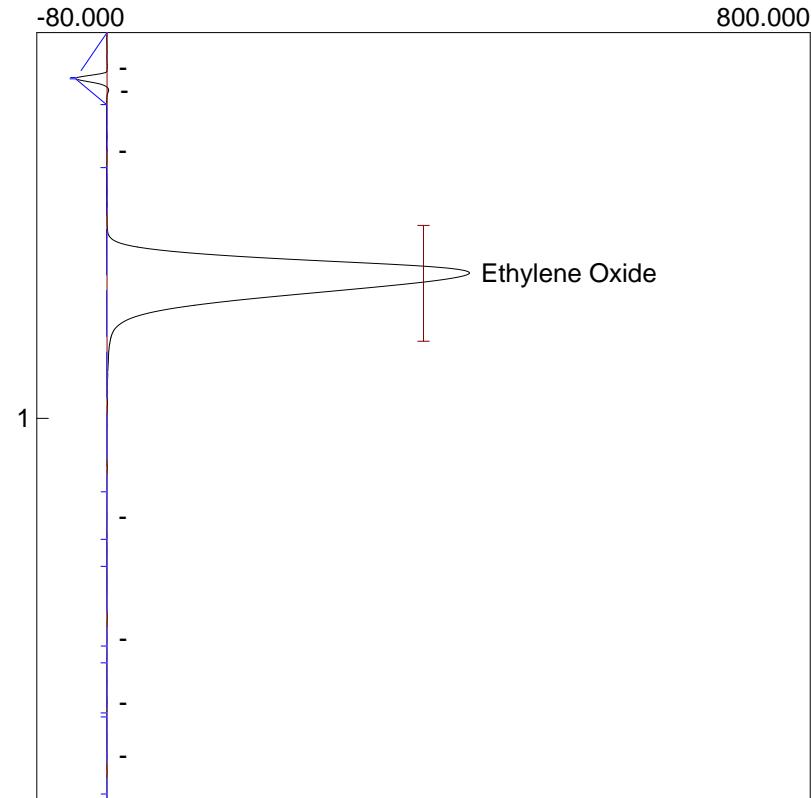
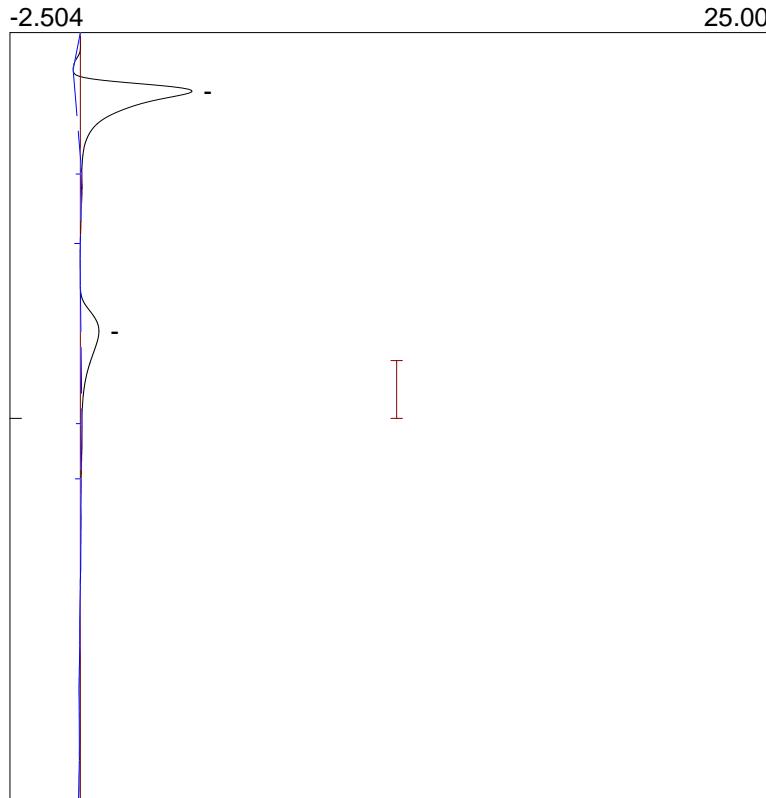
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_620.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.623	2508.1318
1			2508.1318

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:27:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_621.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:27:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

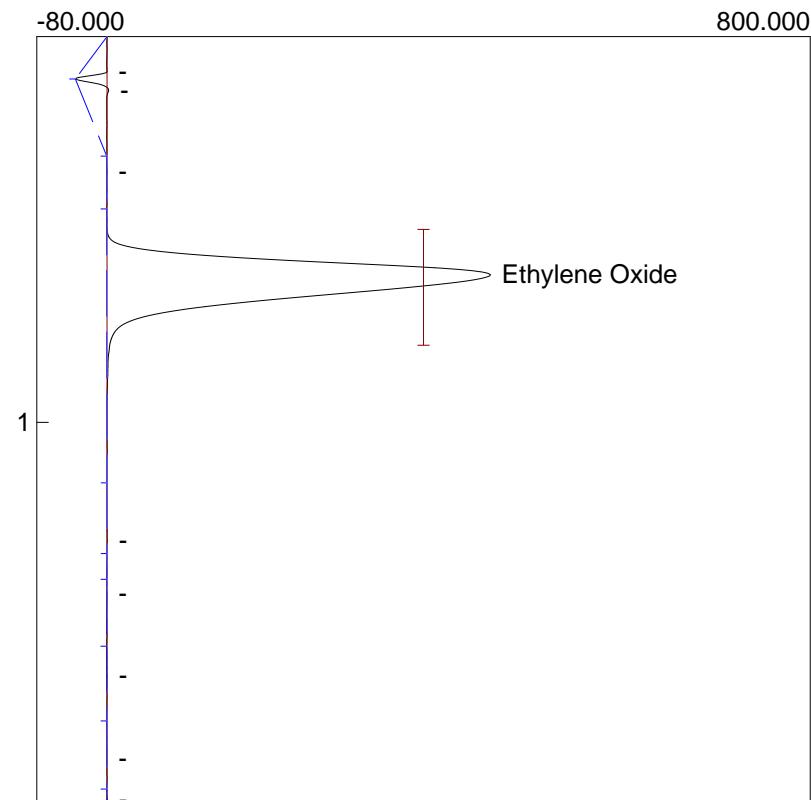
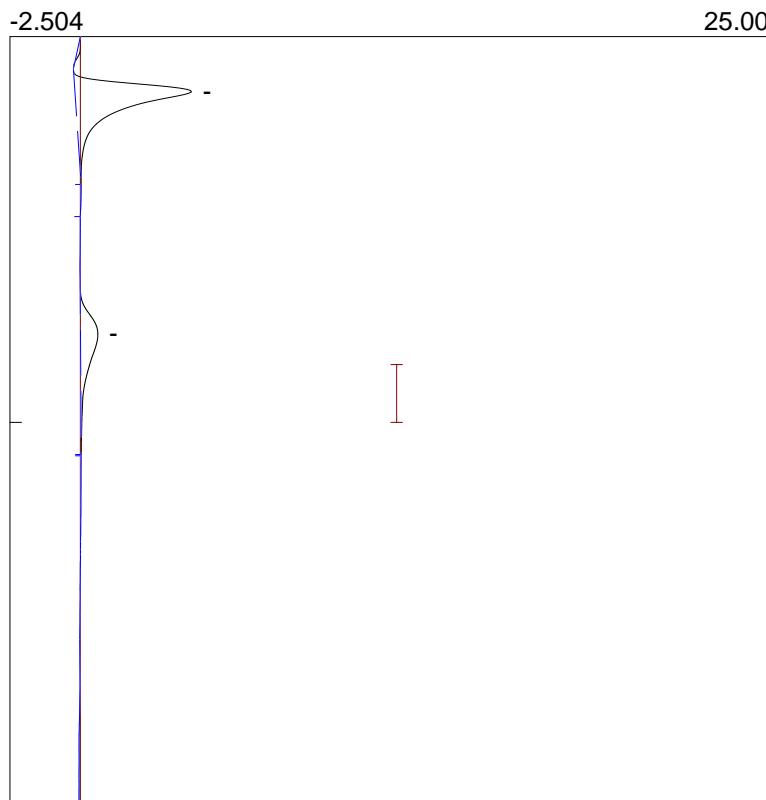
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_621.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.616	2657.8637
1			2657.8637

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:29:41

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_622.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:29:41

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

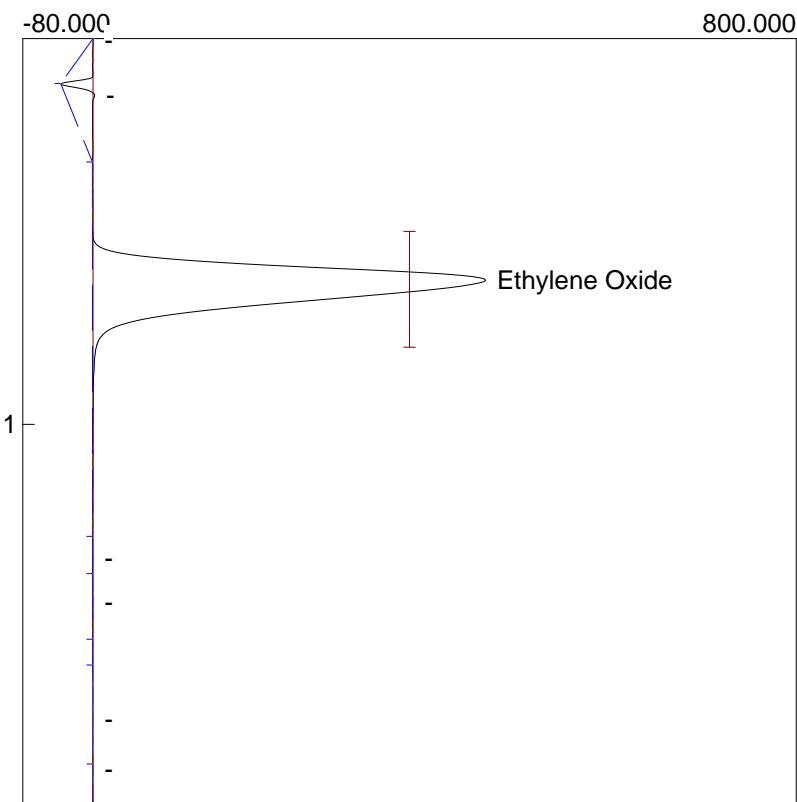
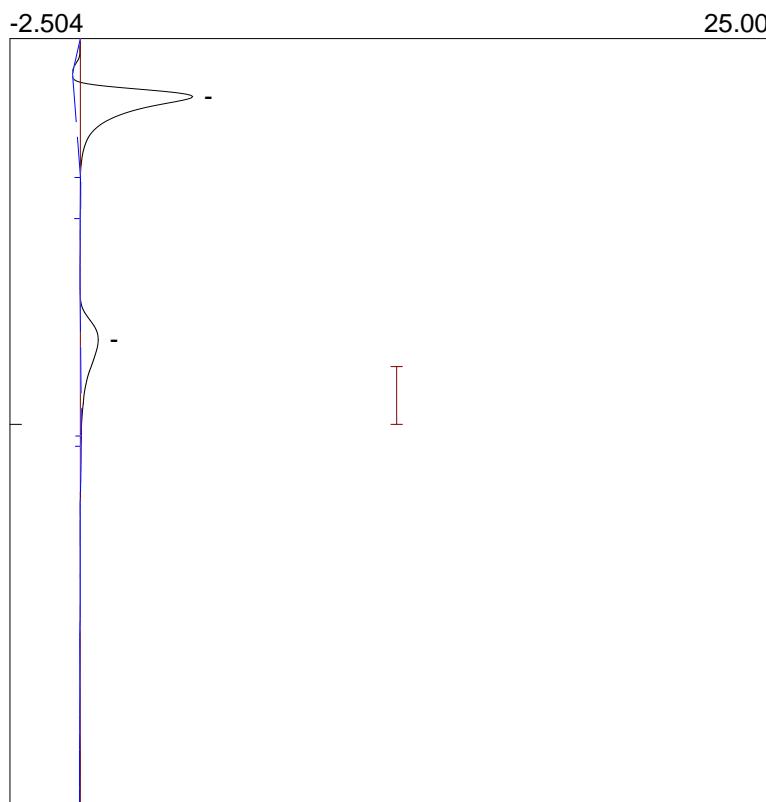
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_622.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	2728.7189
1			2728.7189

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:32:17

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_623.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:32:17

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

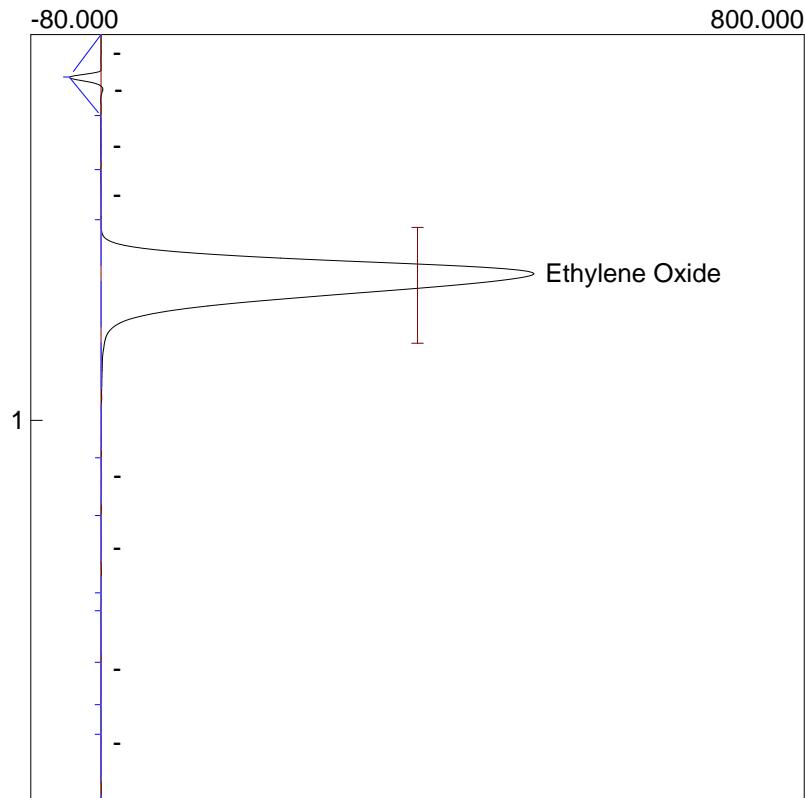
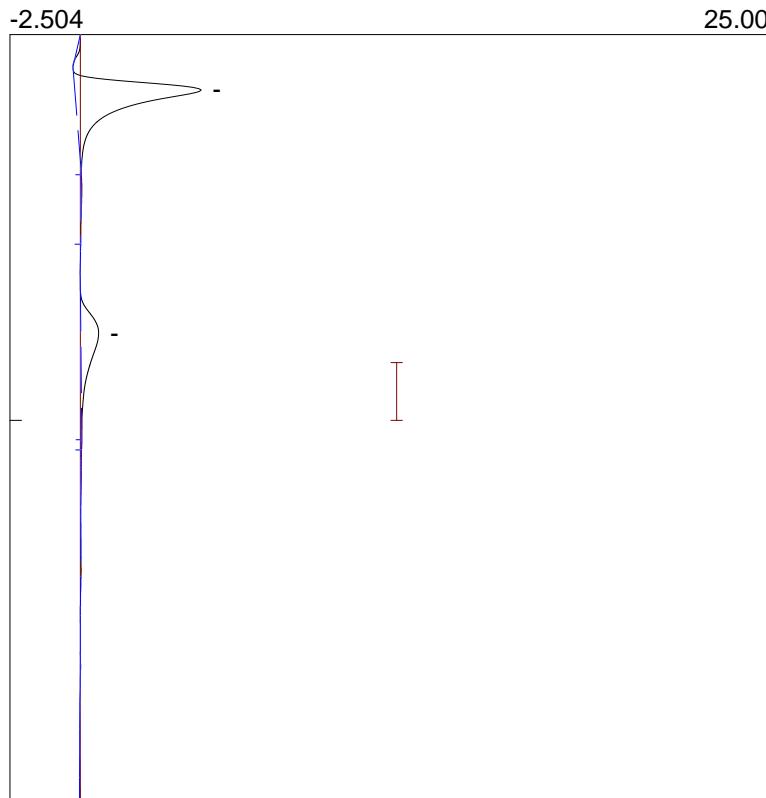
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_623.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.620	2994.1311
1			2994.1311

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:34:56

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_624.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:34:56

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

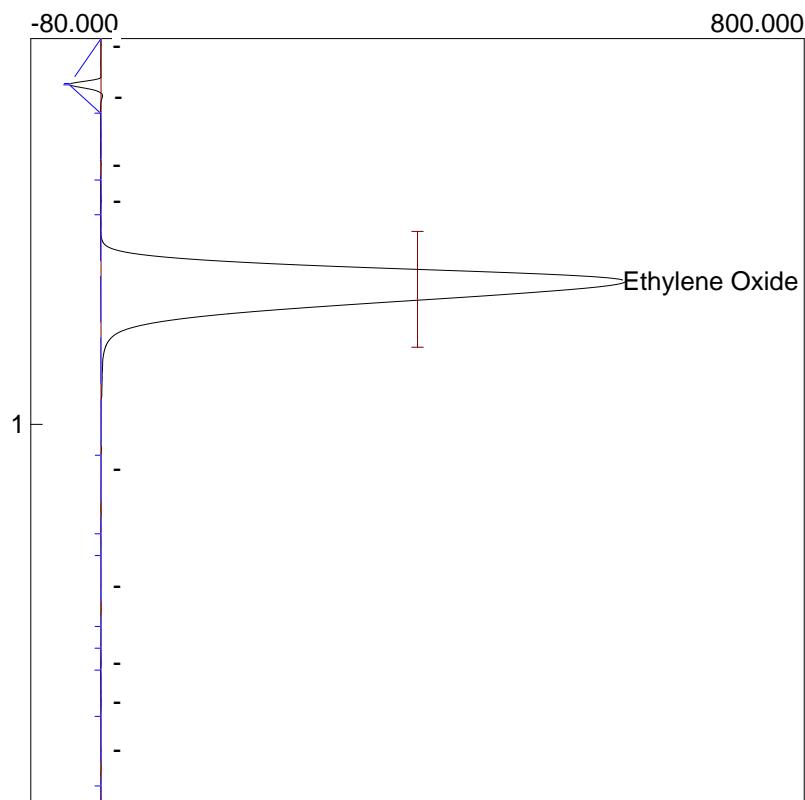
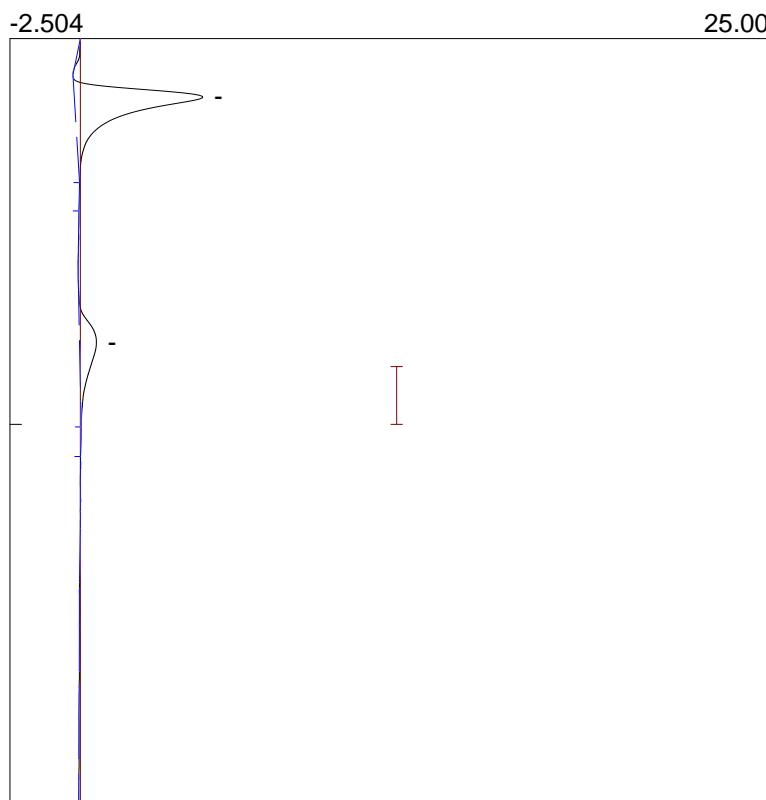
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_624.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	3627.1516
1			3627.1516

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:37:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_625.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:37:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

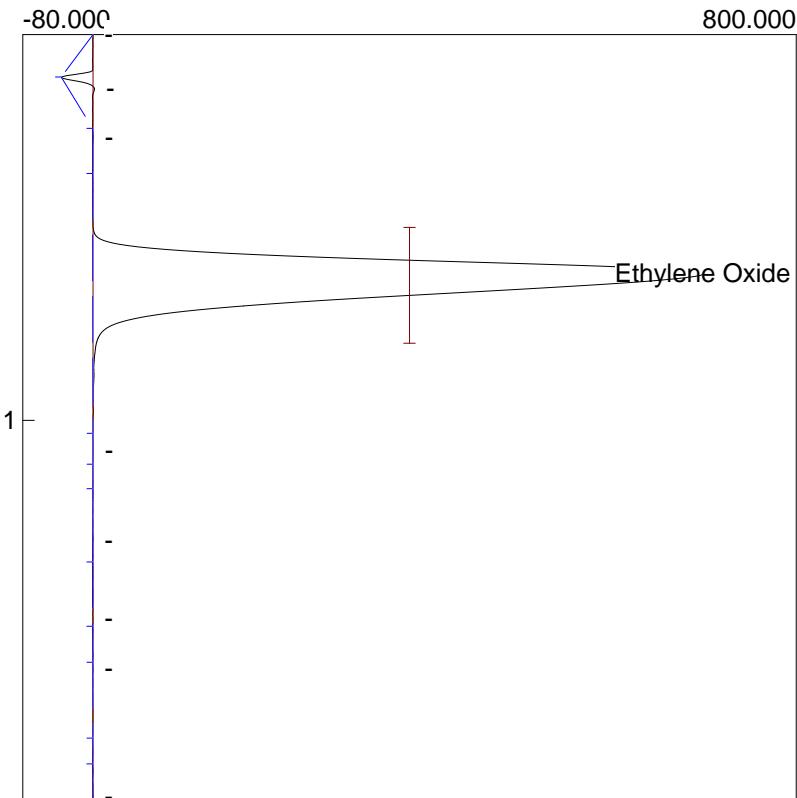
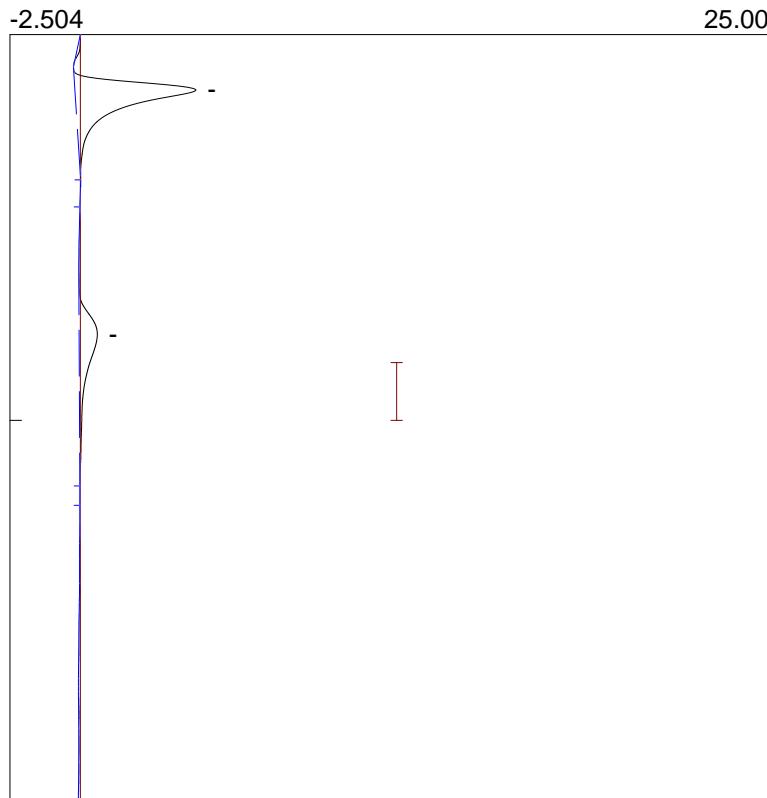
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_625.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.620	4200.6030
1			4200.6030

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:40:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_626.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:40:11

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

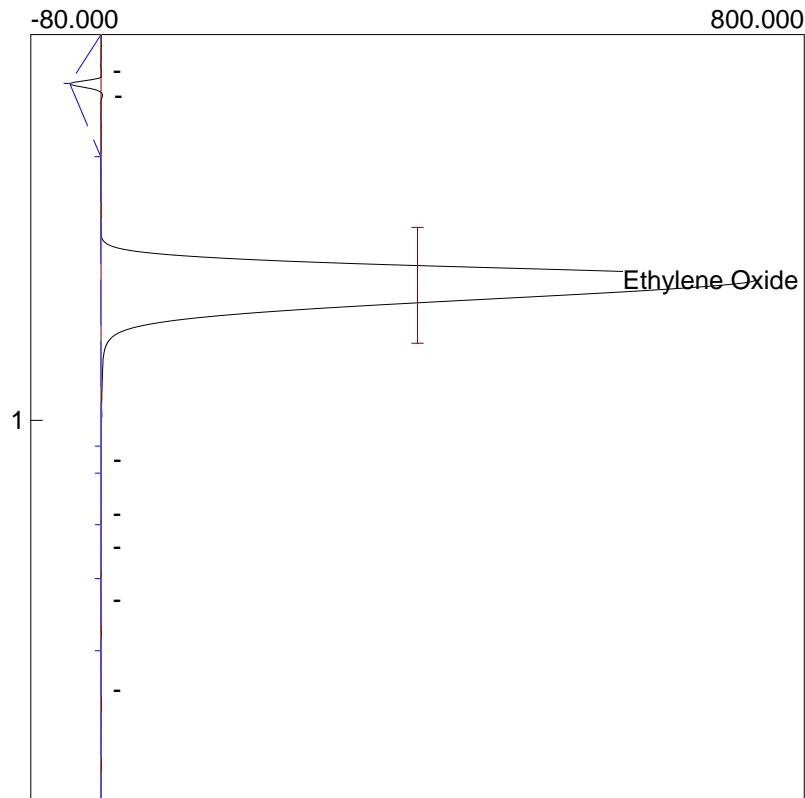
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_626.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.636	4525.8280
1			4525.8280

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:42:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_627.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:42:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

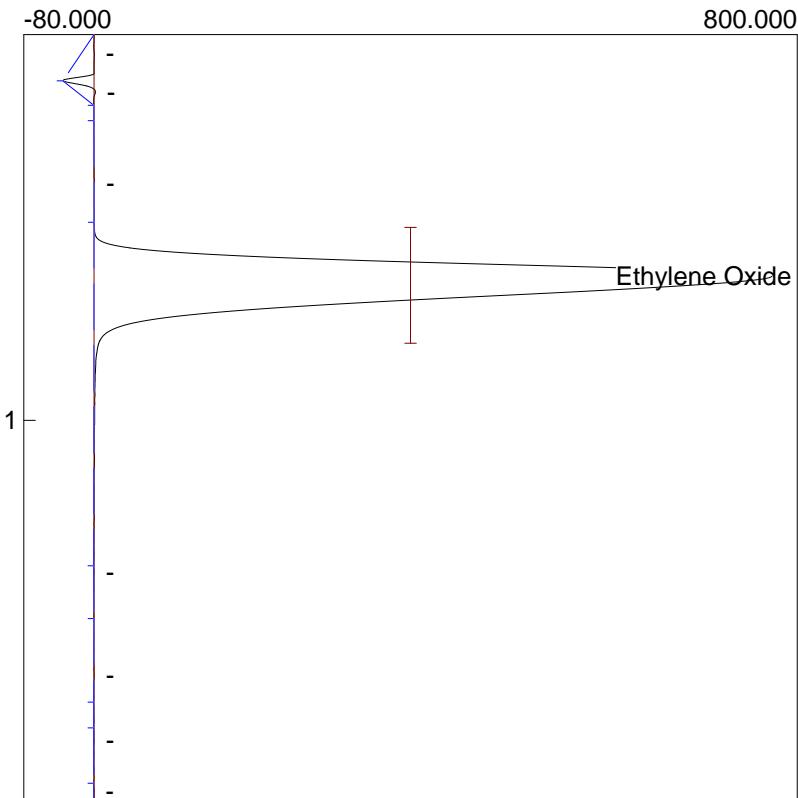
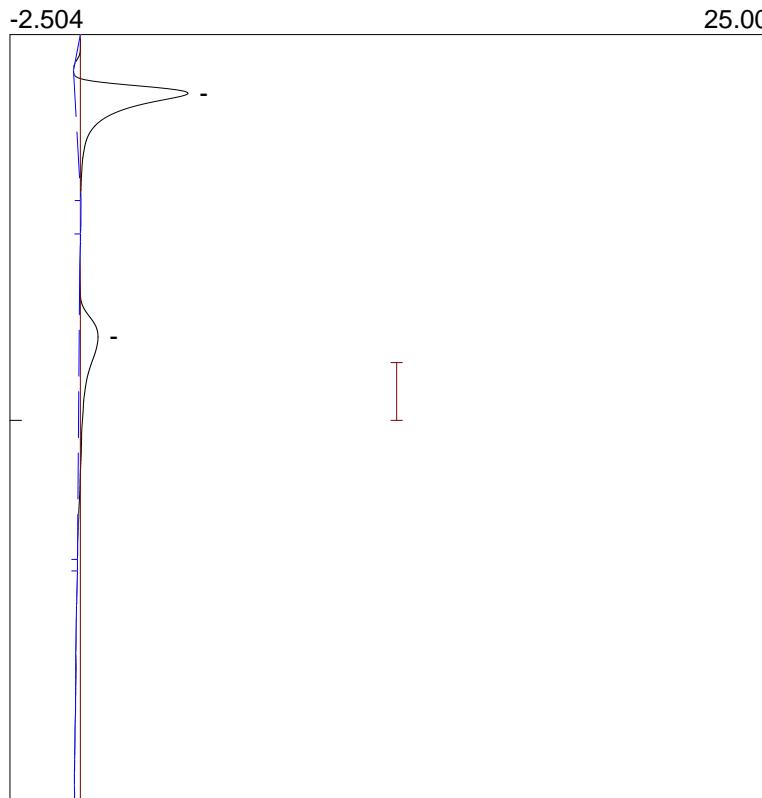
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_627.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.626	4686.9013
1			4686.9013

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:45:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_628.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:45:38

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

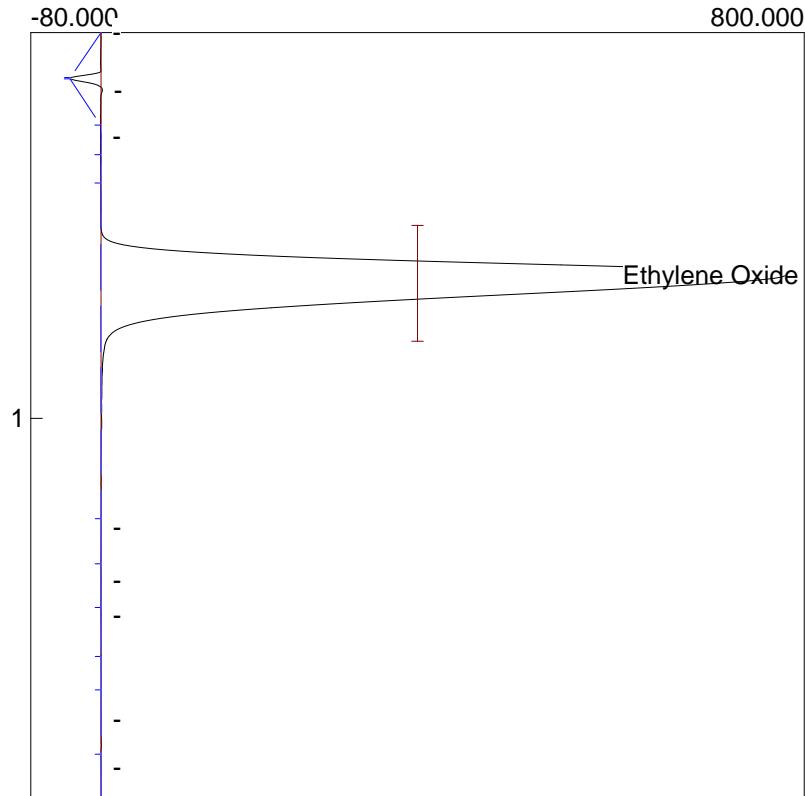
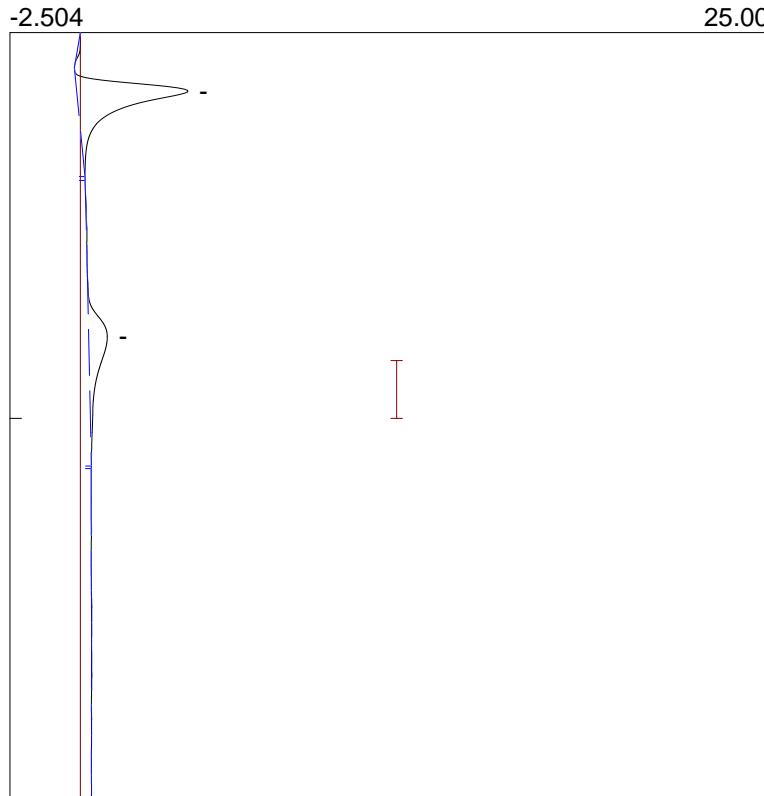
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_628.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	4716.4088
1			4716.4088

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:48:14

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_629.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:48:14

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

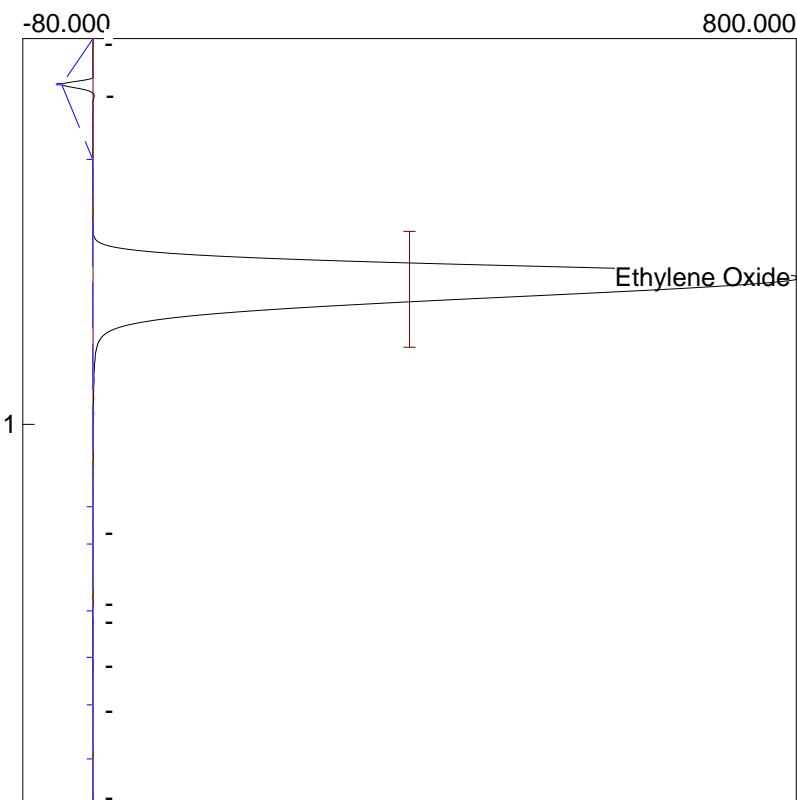
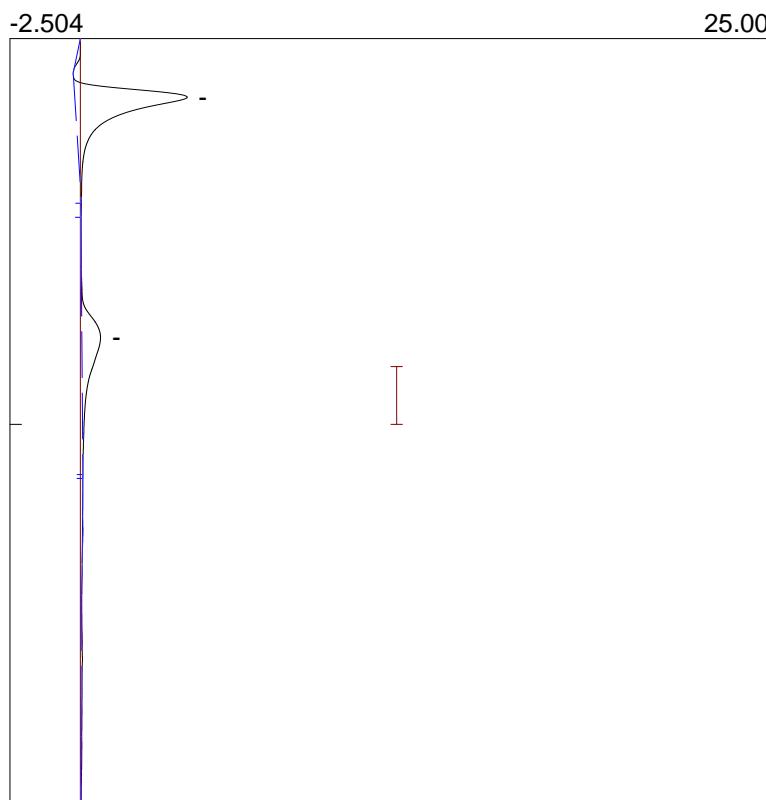
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_629.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.620	4846.8496
1			4846.8496

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:50:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_630.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:50:51

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

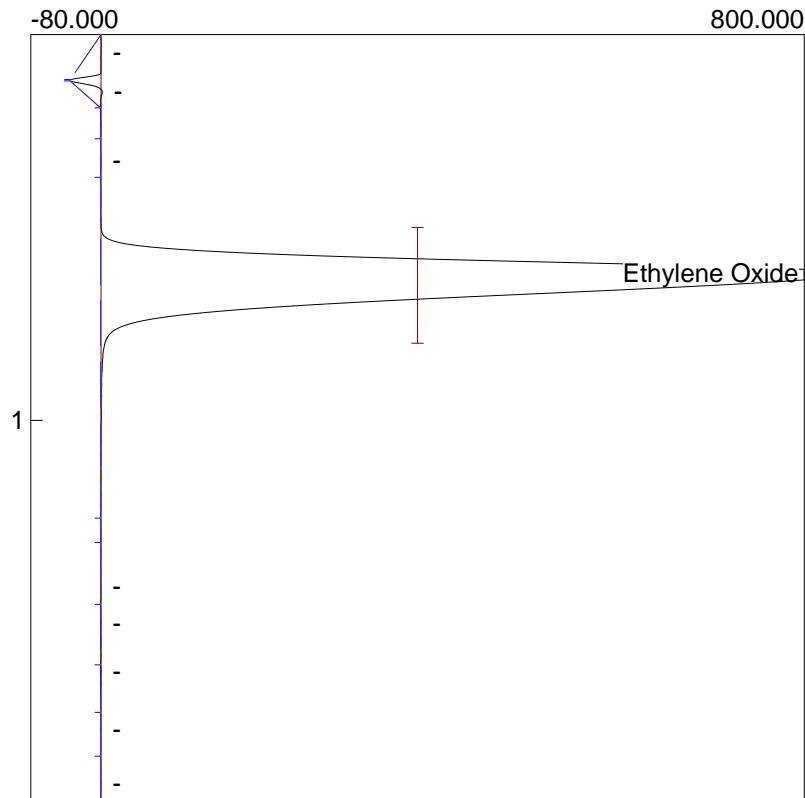
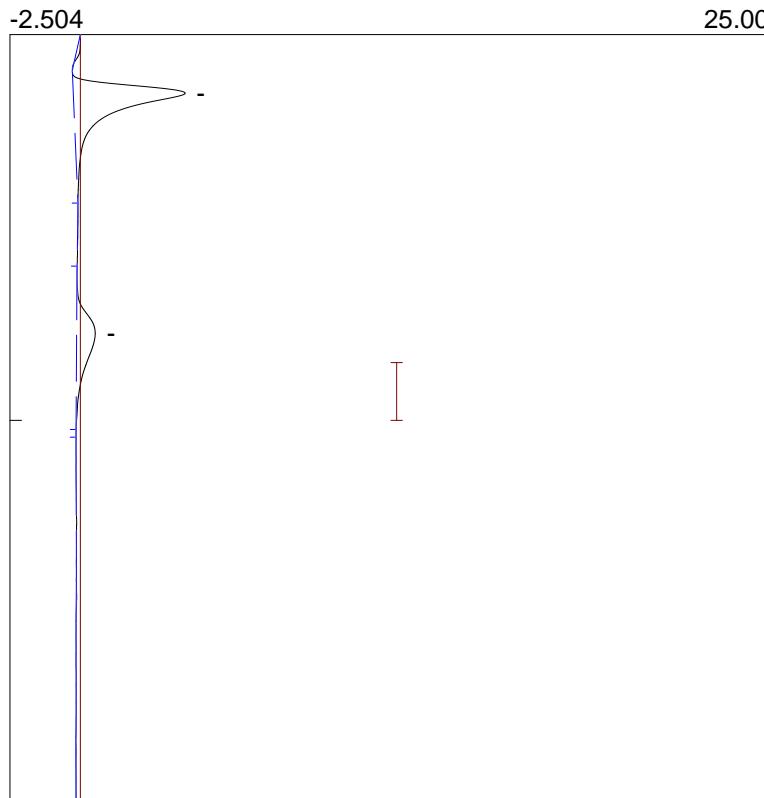
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_630.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.620	5147.3856
1			5147.3856

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:53:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_631.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:53:32

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

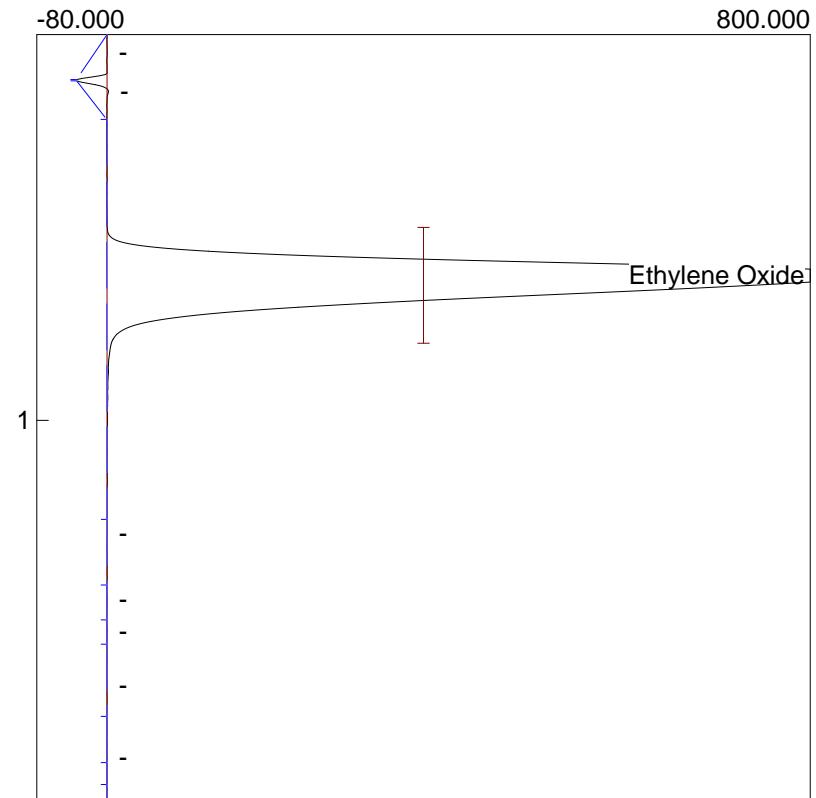
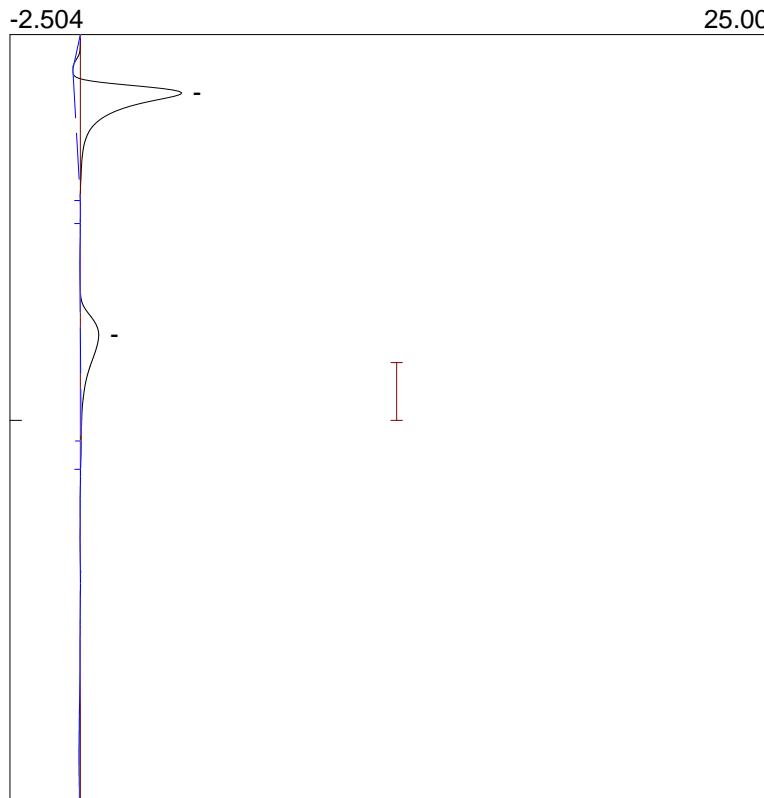
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_631.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.623	5327.8985
1			5327.8985

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:56:08

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_632.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:56:08

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

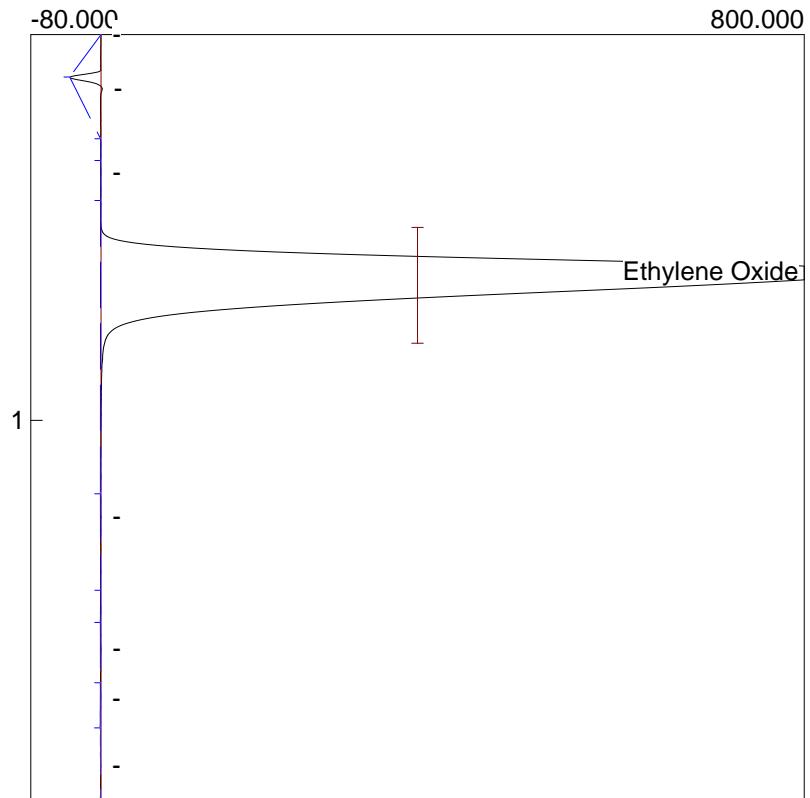
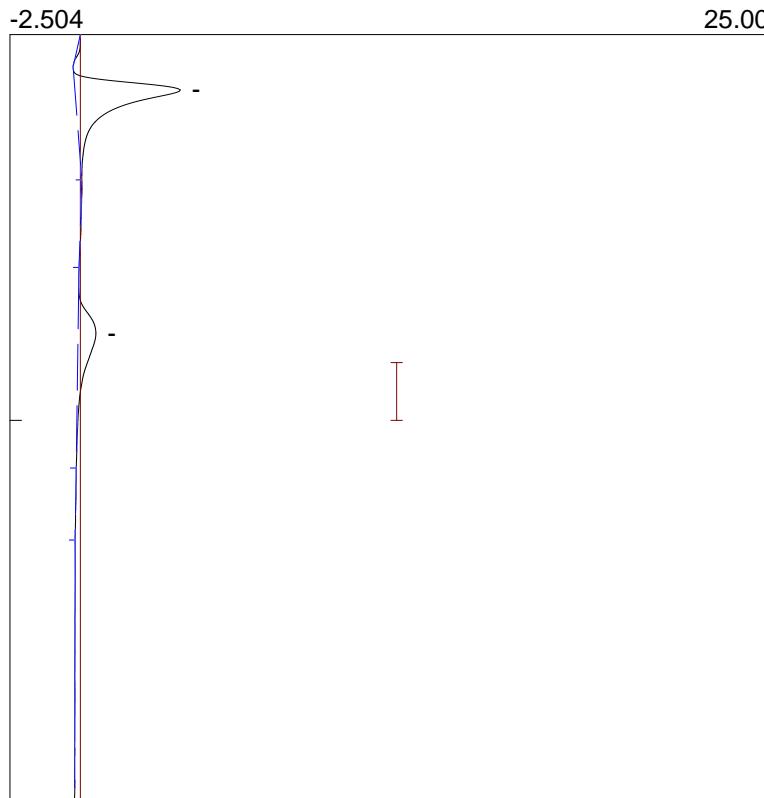
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_632.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.613	5395.6226
1			5395.6226

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:58:46

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_633.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 13:58:46

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

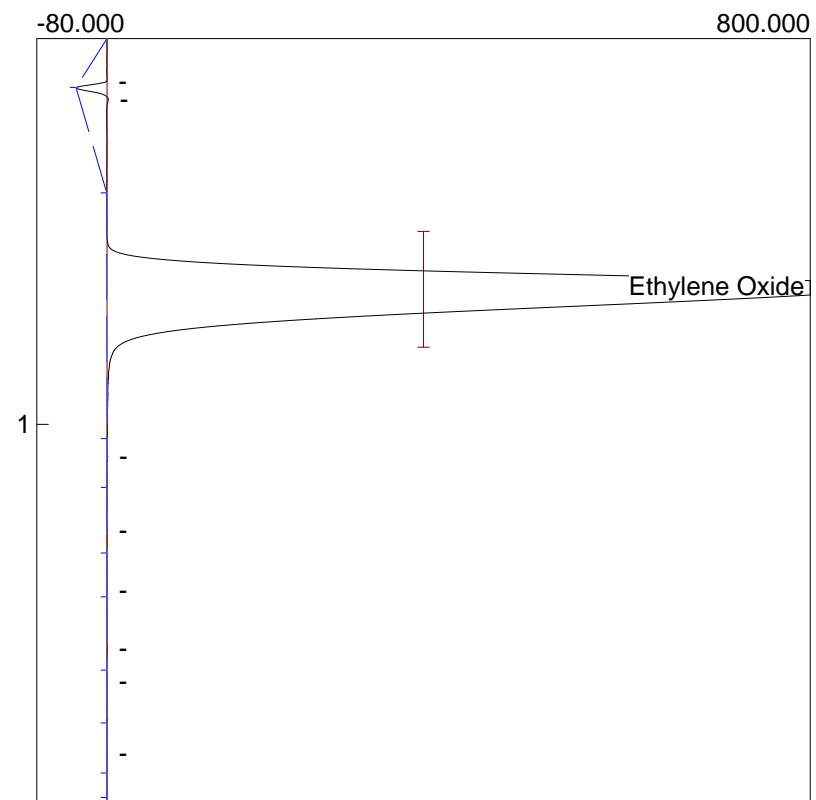
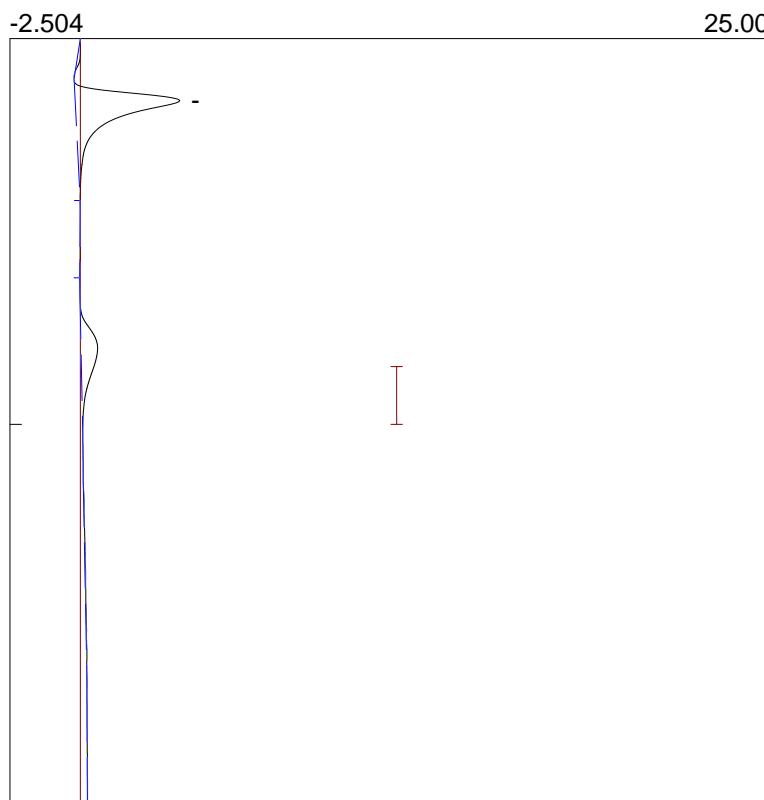
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_633.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	5491.5919
1			5491.5919

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:01:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_634.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:01:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

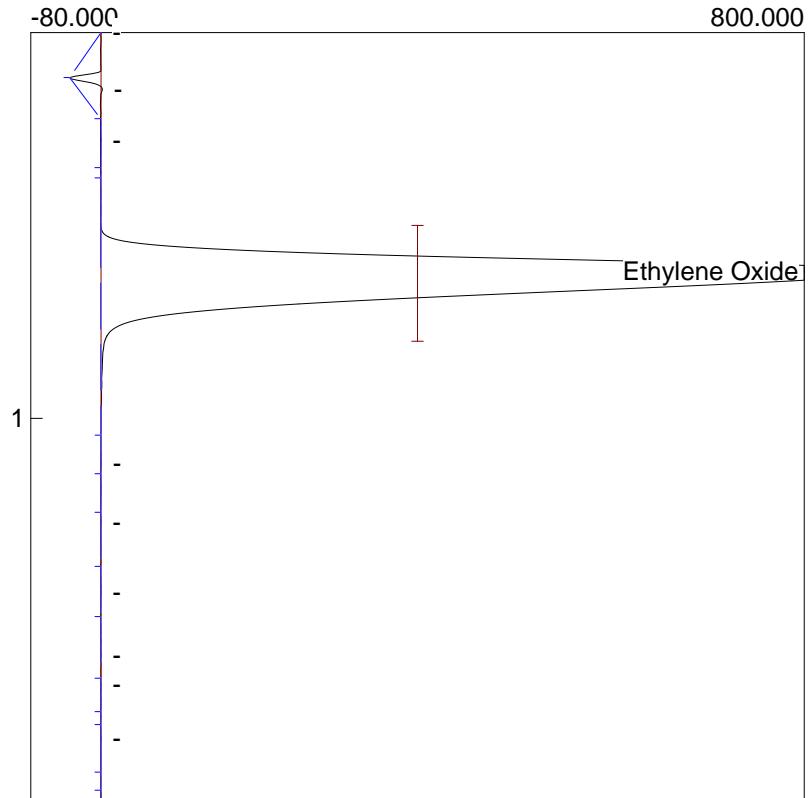
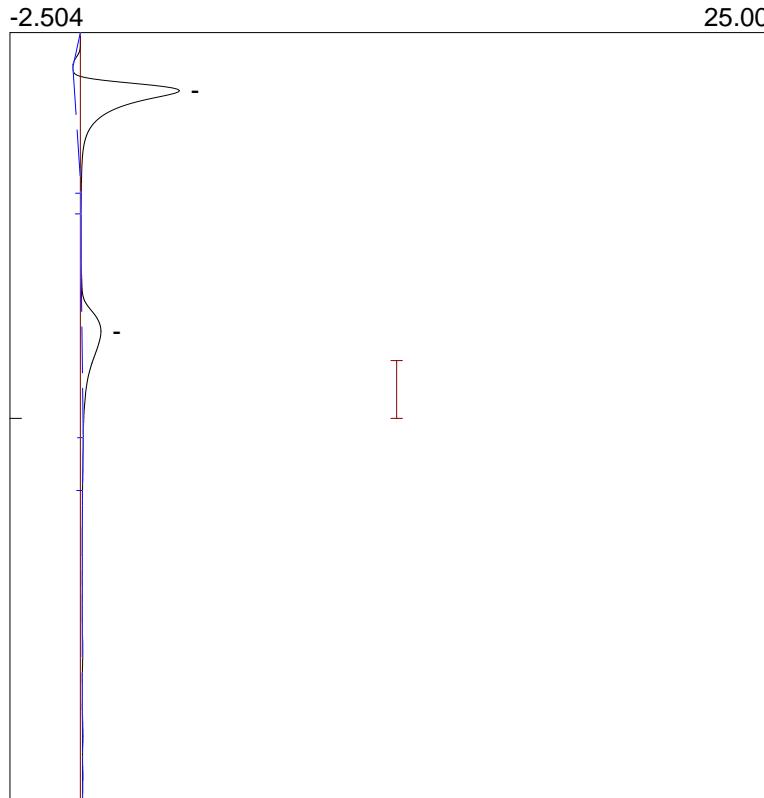
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_634.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.620	5441.9154
1			5441.9154

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:04:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_635.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:04:13

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

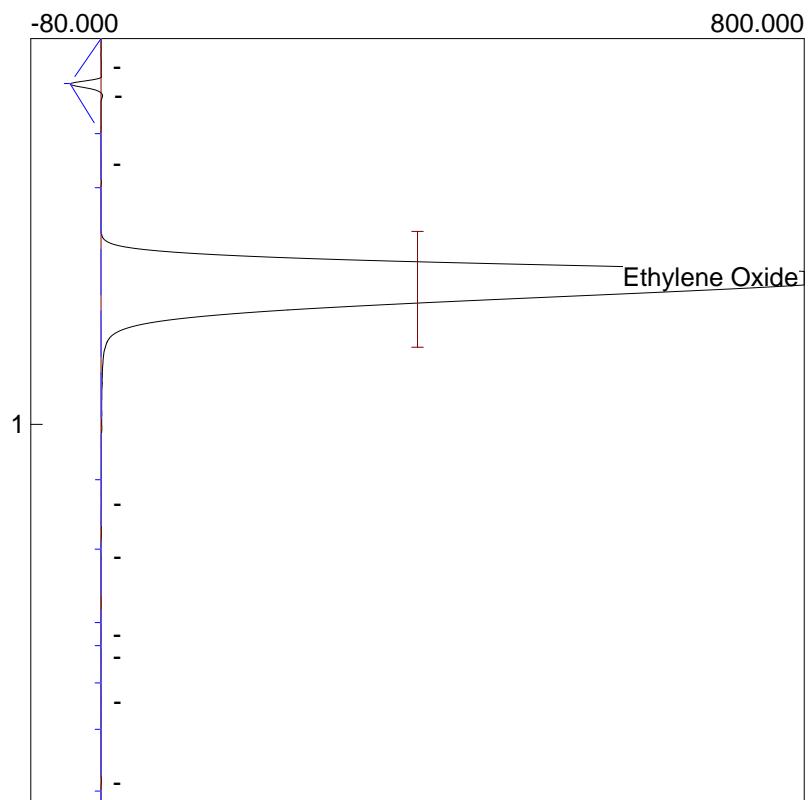
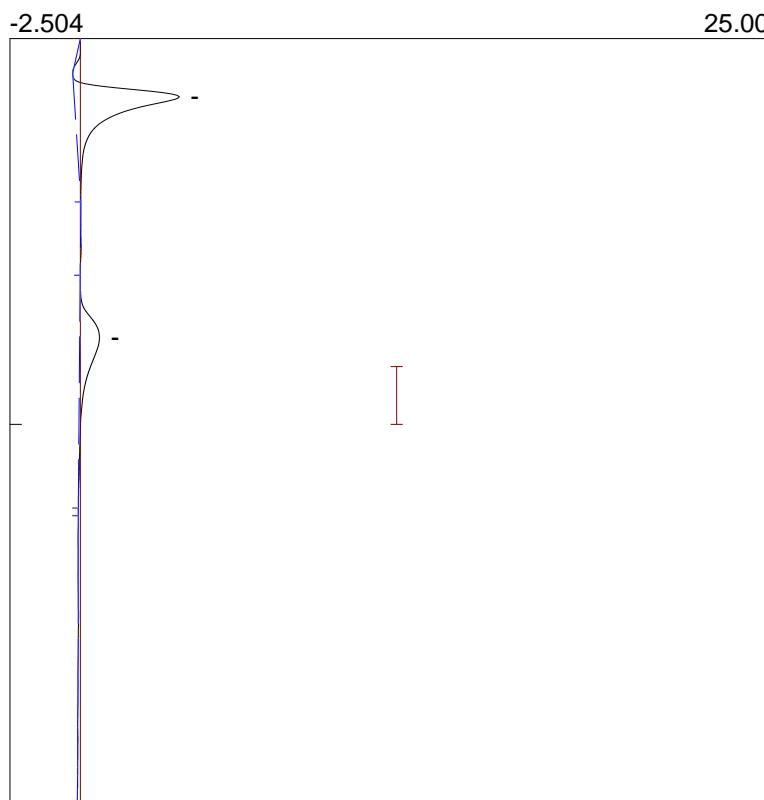
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_635.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.620	5338.6142
1			5338.6142

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:06:55

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_636.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:06:55

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

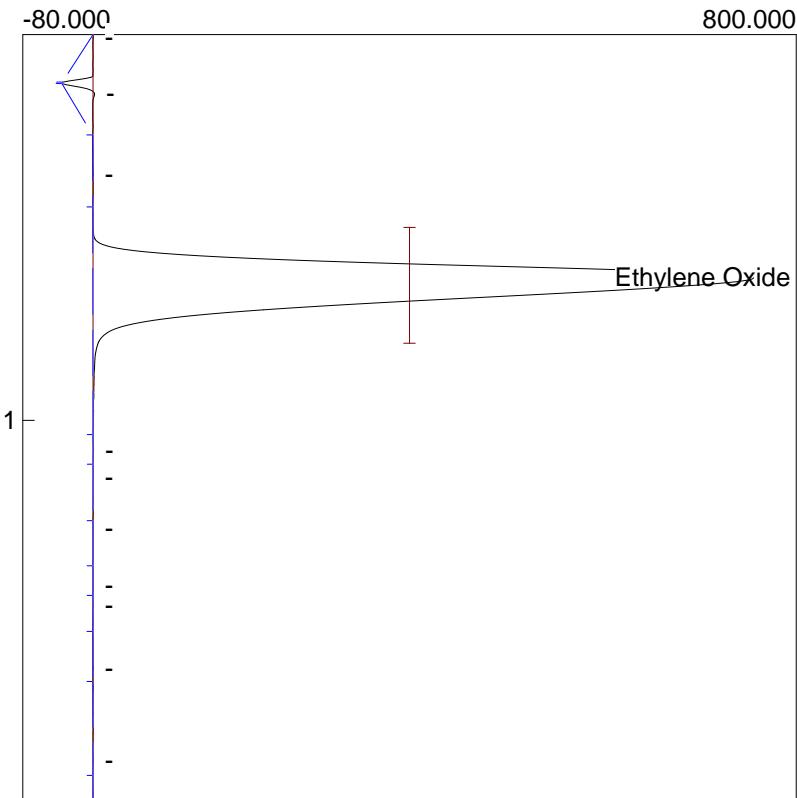
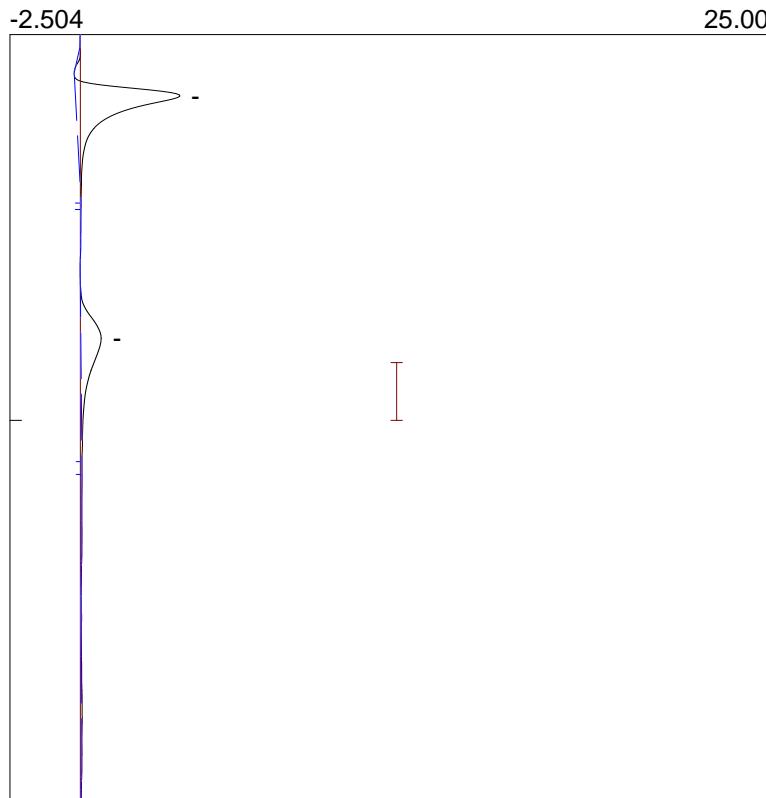
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_636.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.630	4531.8728
1			4531.8728

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:09:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_637.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:09:31

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

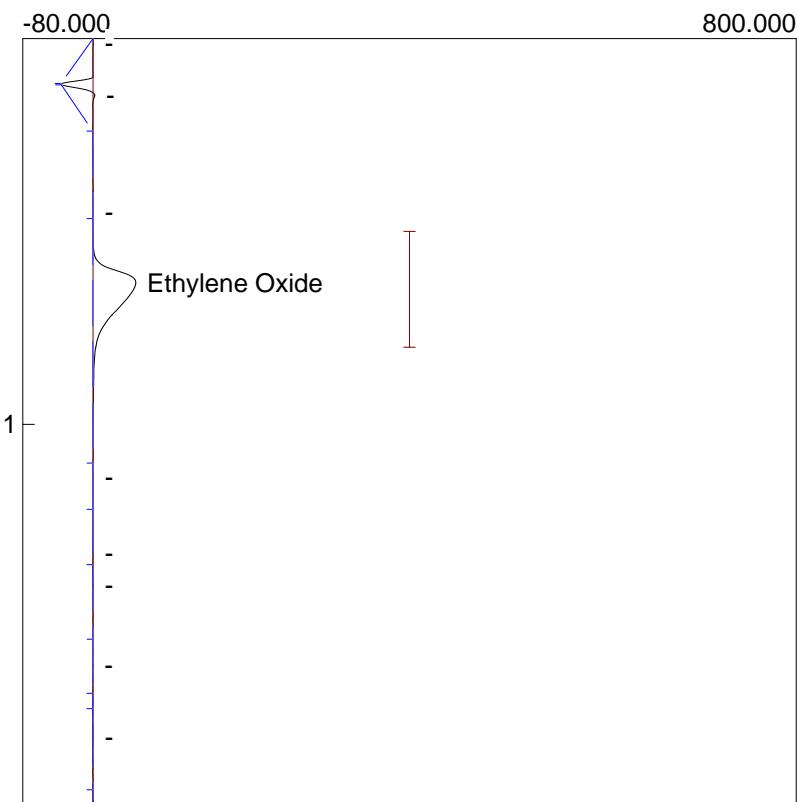
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_637.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	361.1818
1			361.1818

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:12:08

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_638.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:12:08

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

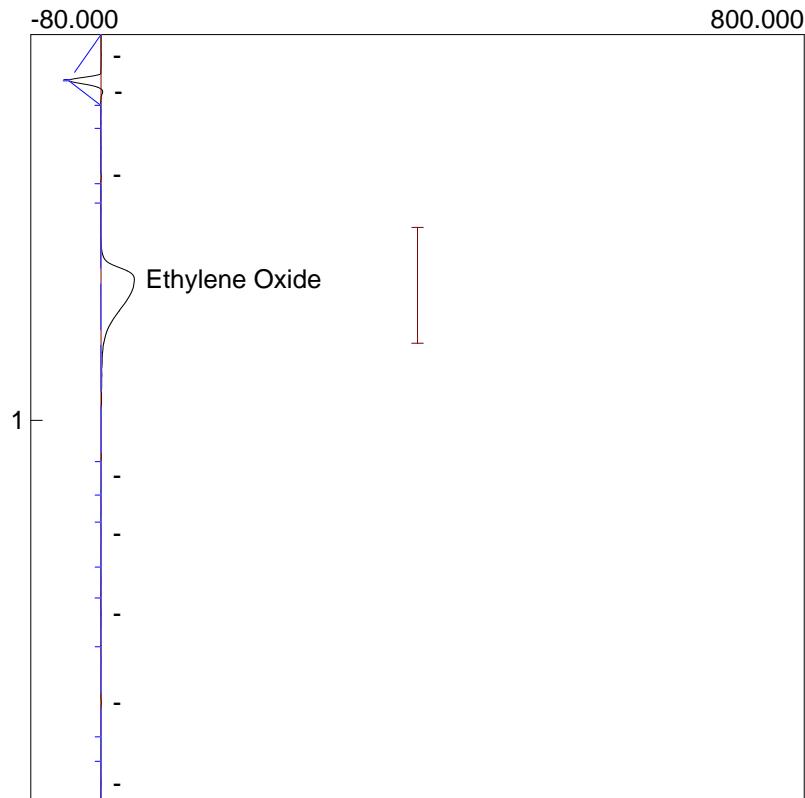
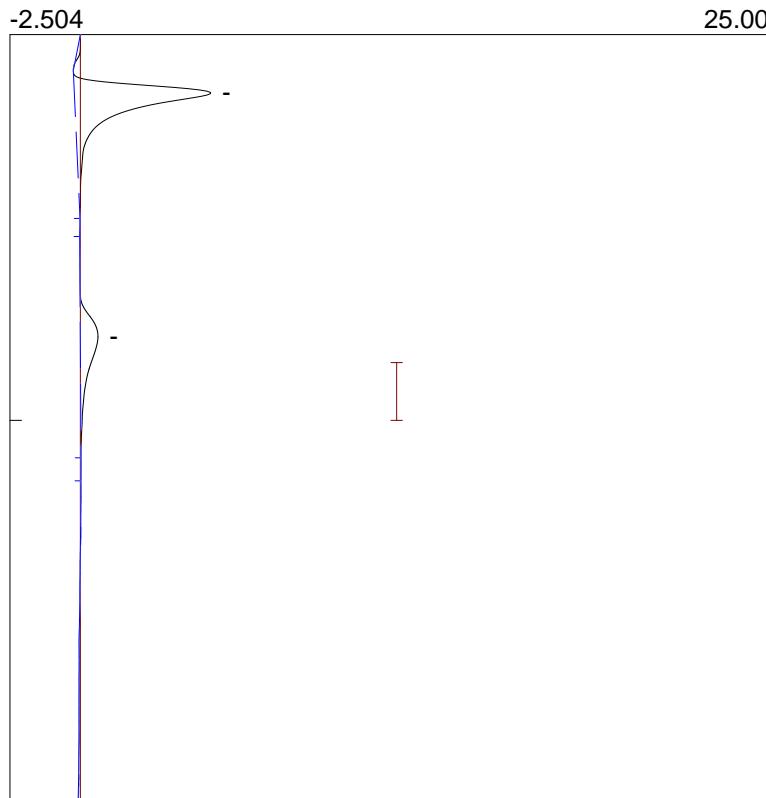
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_638.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.633	299.0102
1			299.0102

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:14:44

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_639.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:14:44

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

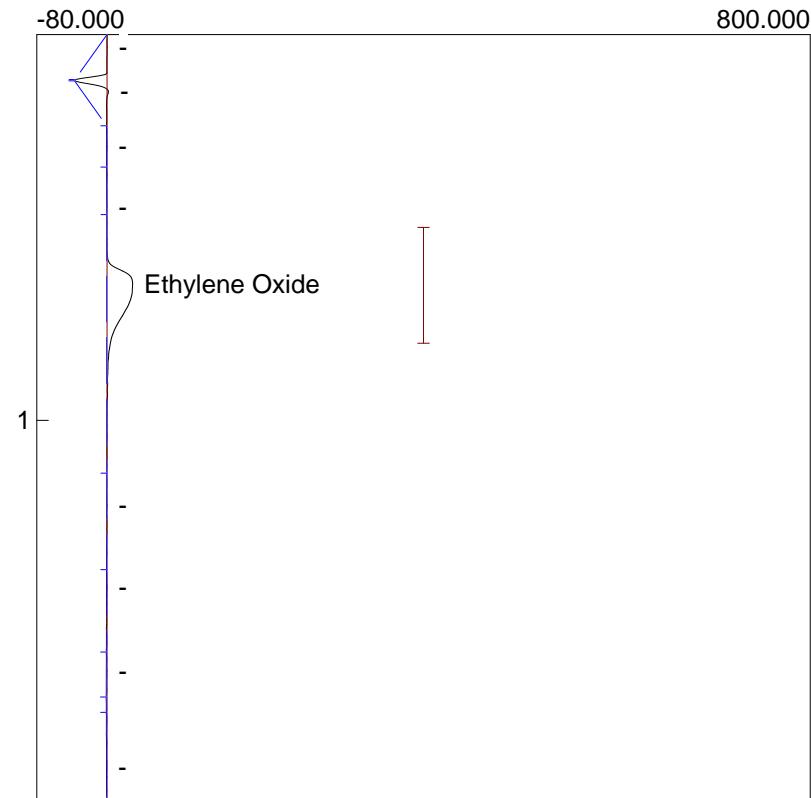
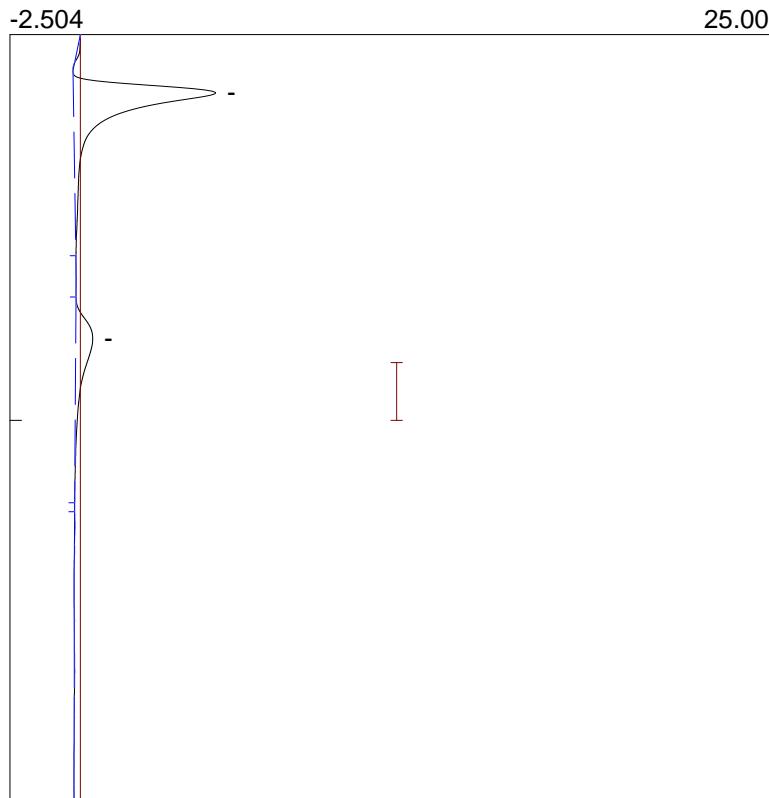
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_639.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	256.4434
1			256.4434

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:17:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_640.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: Run 1

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:17:22

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

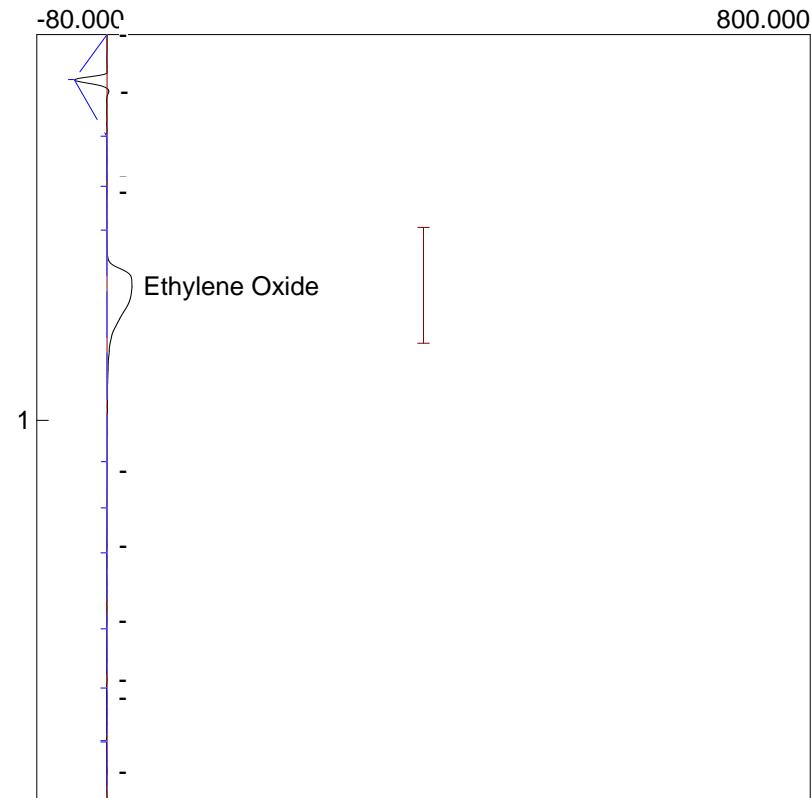
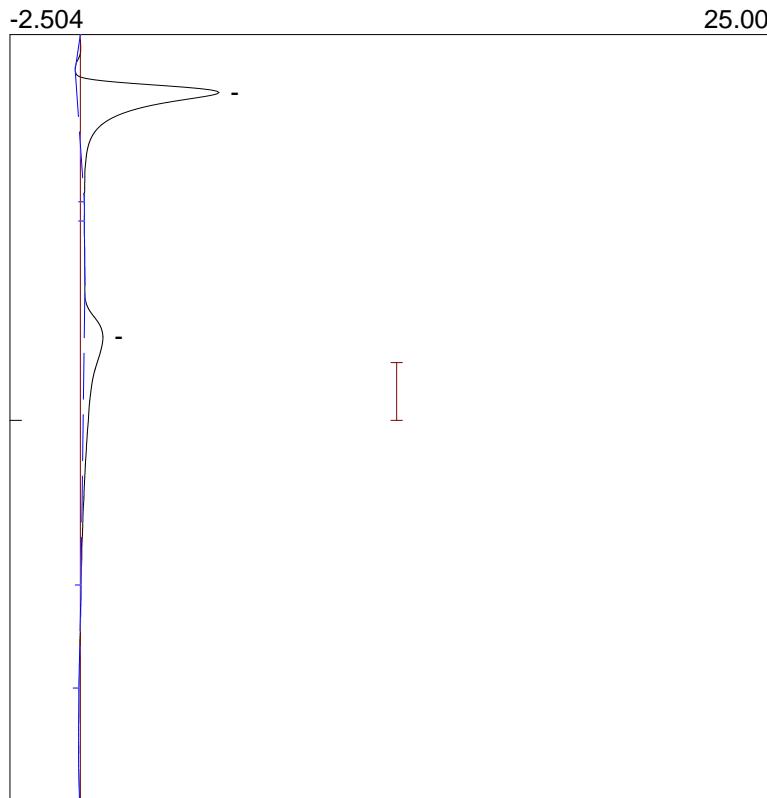
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_640.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: Run 1



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	248.1656
1			248.1656

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:19:59

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

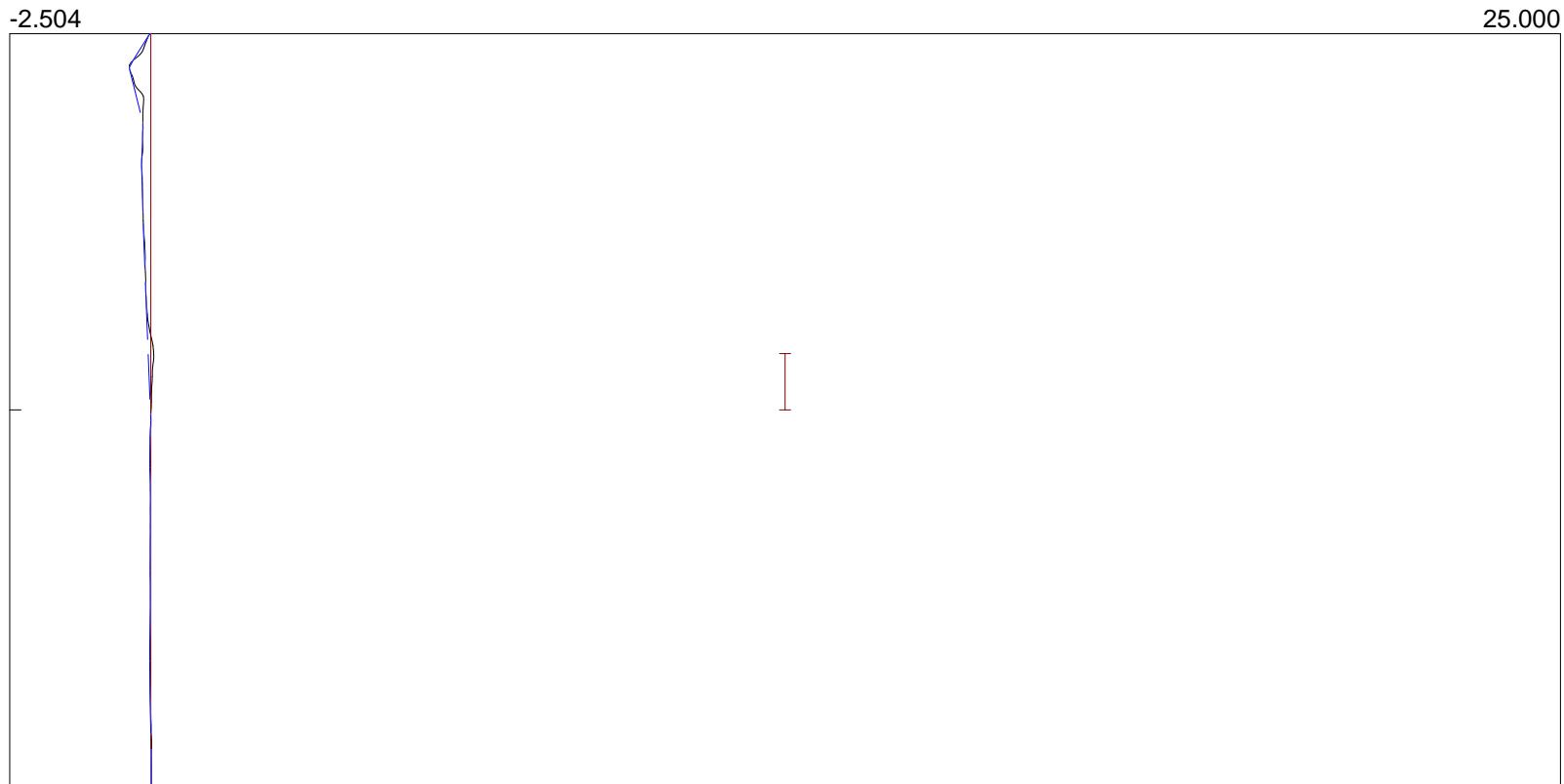
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_641.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Drift



Number	Component	Retention	Area
0	Ethylene Oxide	0.000	0.0000
0			0.0000

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:24:02

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_643.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Drift

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:24:02

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

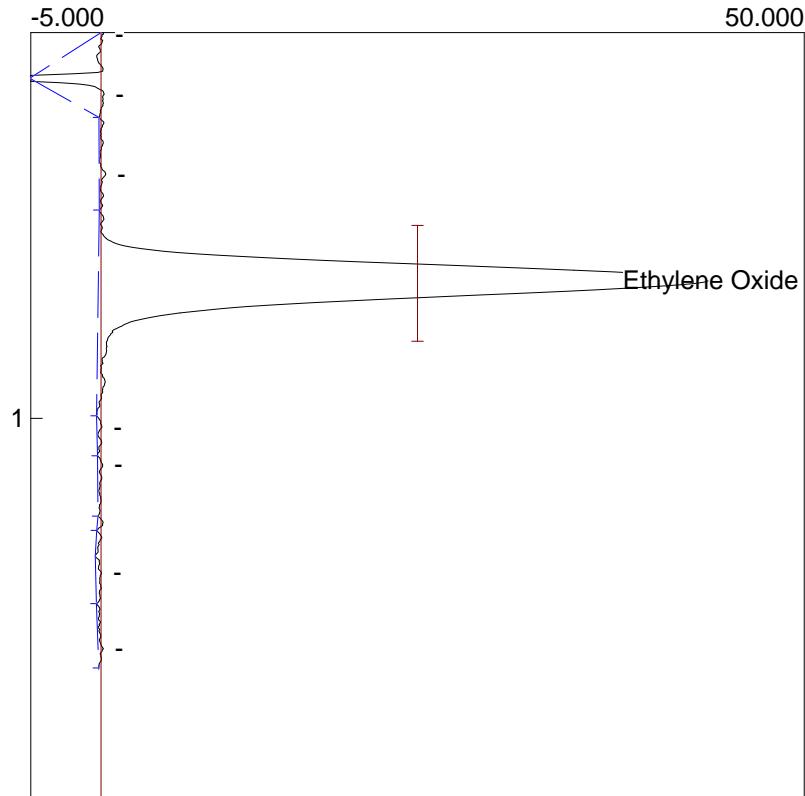
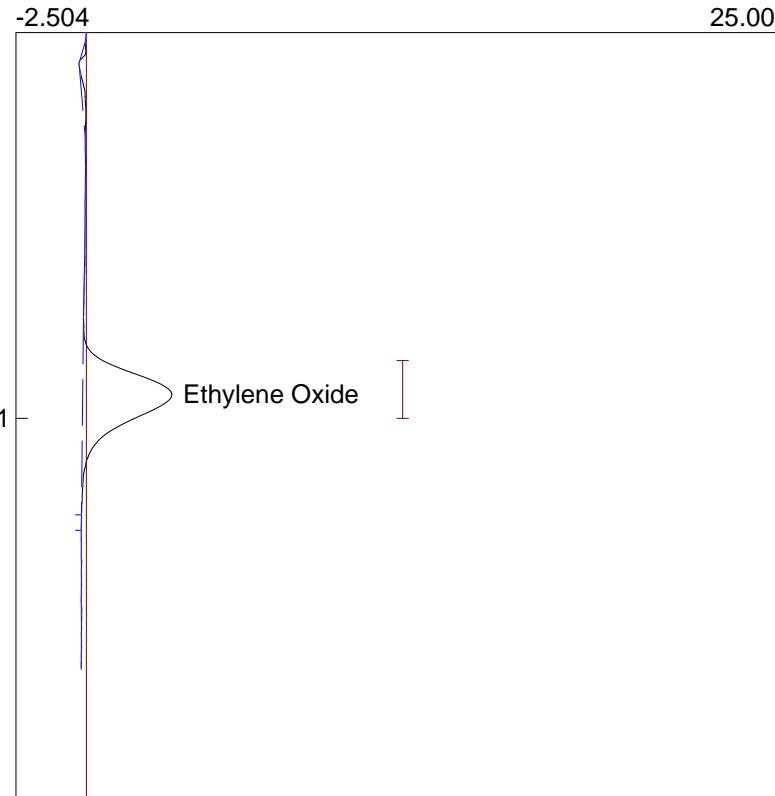
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_643.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Calibration Drift



Number	Component	Retention	Area
0	Ethylene Oxide	0.936	27.4188
1			27.4188

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	258.9722
1			258.9722

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:26:15

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_644.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Drift

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:26:15

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

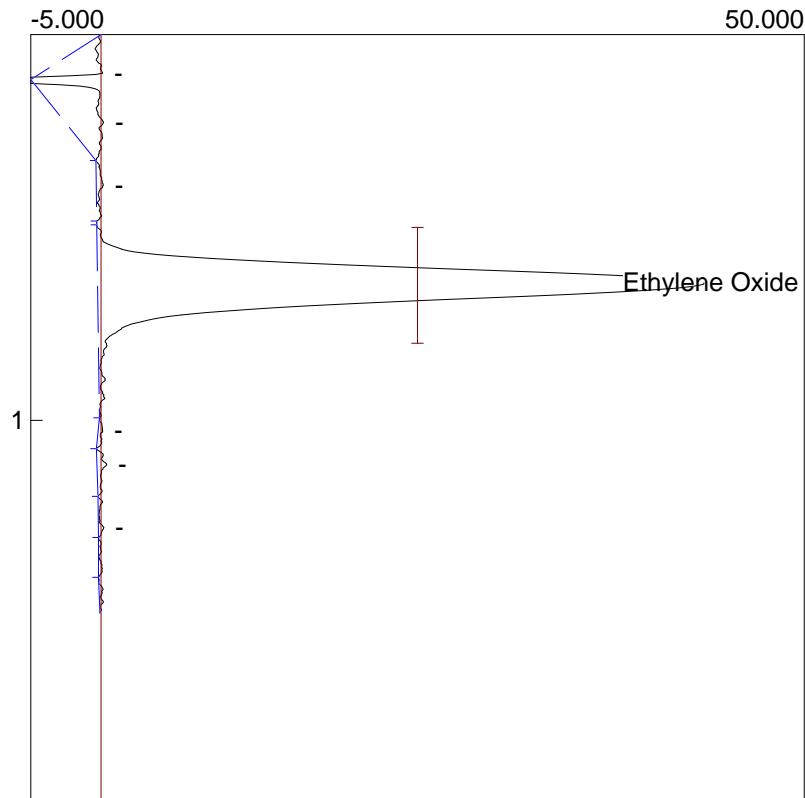
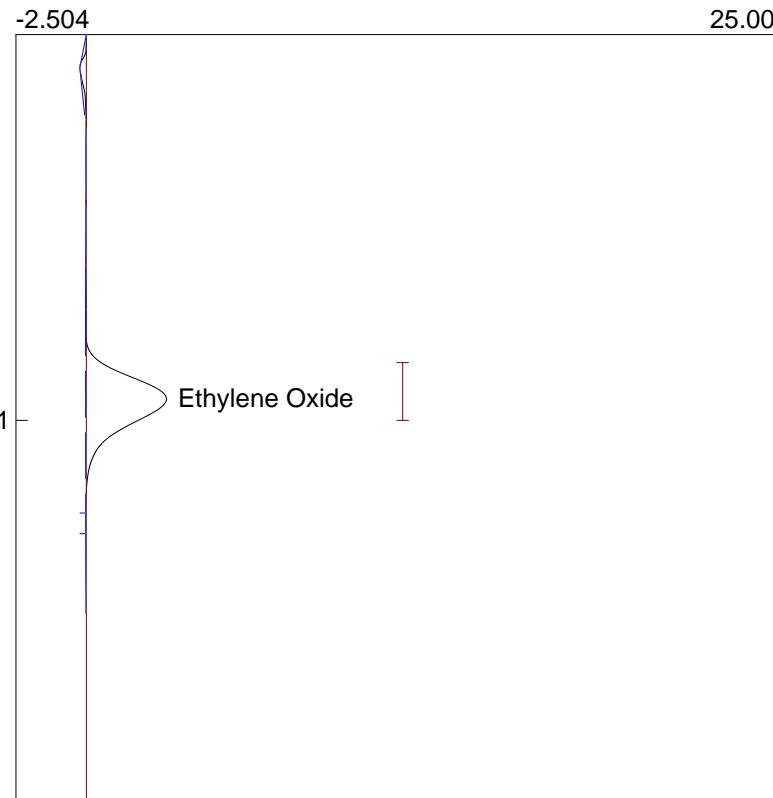
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_644.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Calibration Drift



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	25.1316
1			25.1316

Number	Component	Retention	Area
1	Ethylene Oxide	0.643	252.9206
1			252.9206

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:27:52

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_645.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Drift

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:27:52

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

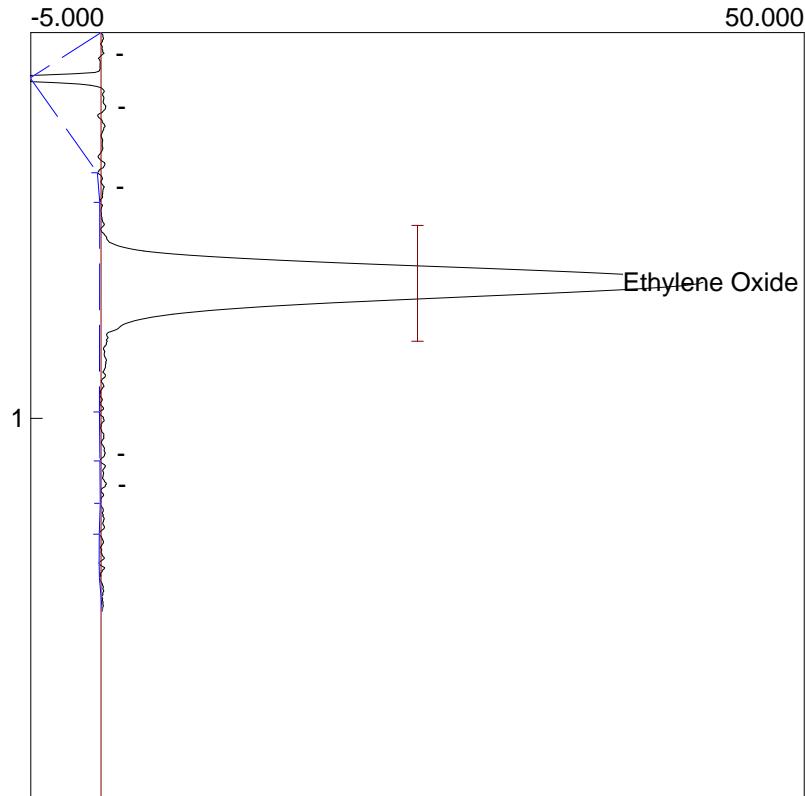
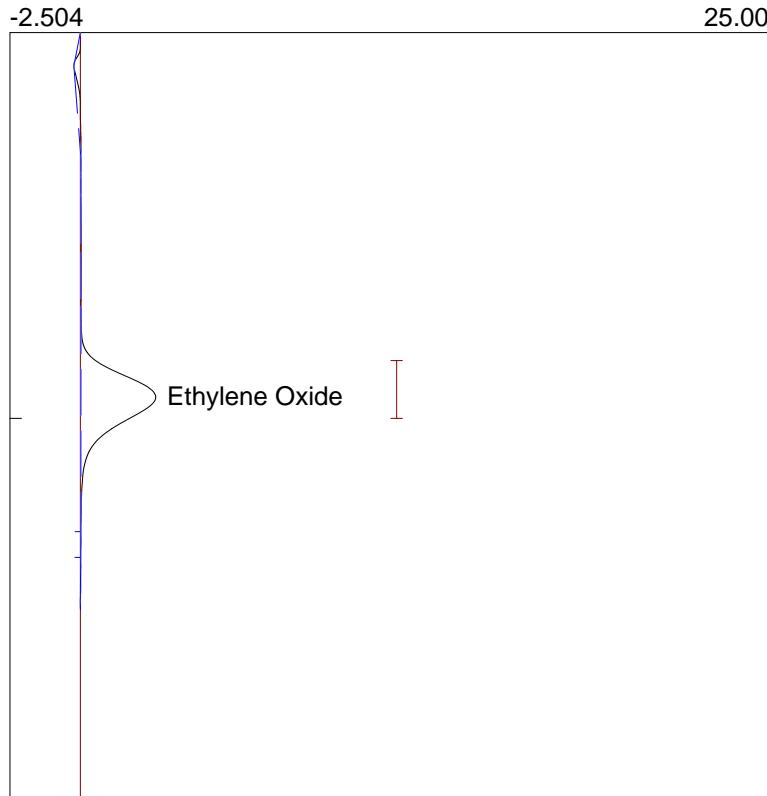
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_645.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Calibration Drift



Number	Component	Retention	Area
0	Ethylene Oxide	0.943	23.4966
1			23.4966

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	250.3791
1			250.3791

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:29:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_646.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Drift

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:29:28

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

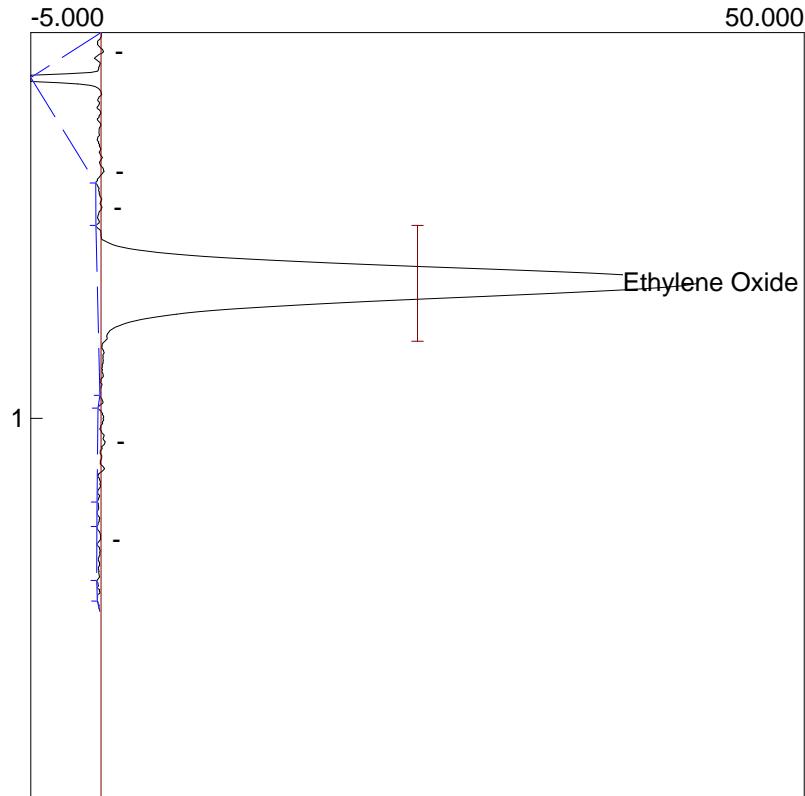
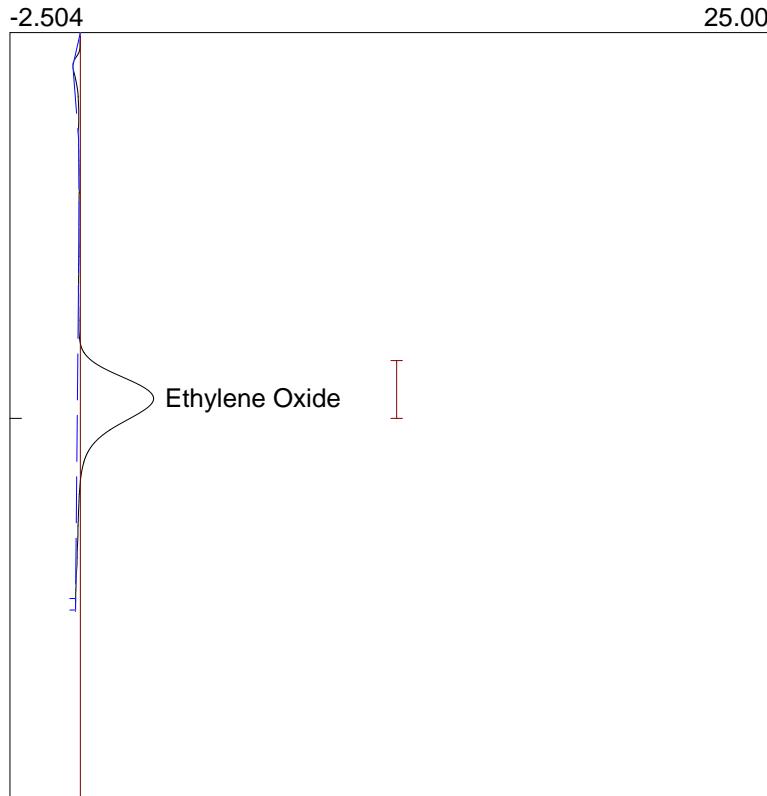
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_646.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Calibration Drift



Number	Component	Retention	Area
0	Ethylene Oxide	0.946	25.5626
1			25.5626

Number	Component	Retention	Area
1	Ethylene Oxide	0.646	249.2756
1			249.2756

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:31:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: FID

Column: Haysep D

Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_FID_647.()

Sample: LESNI OUTLET

Operator: L Christopher Heilner

Comments: 10ppm Calibration Drift

Lab name: LCH Consulting Associates, LLC

Client: Boston Scientific Dorado

Client ID: BSCIPR

Analysis date: 06/14/2019 14:31:05

Method: USEPA Method 18

Lab ID: PADEP 06-04470

Description: PID

Column: Haysep D

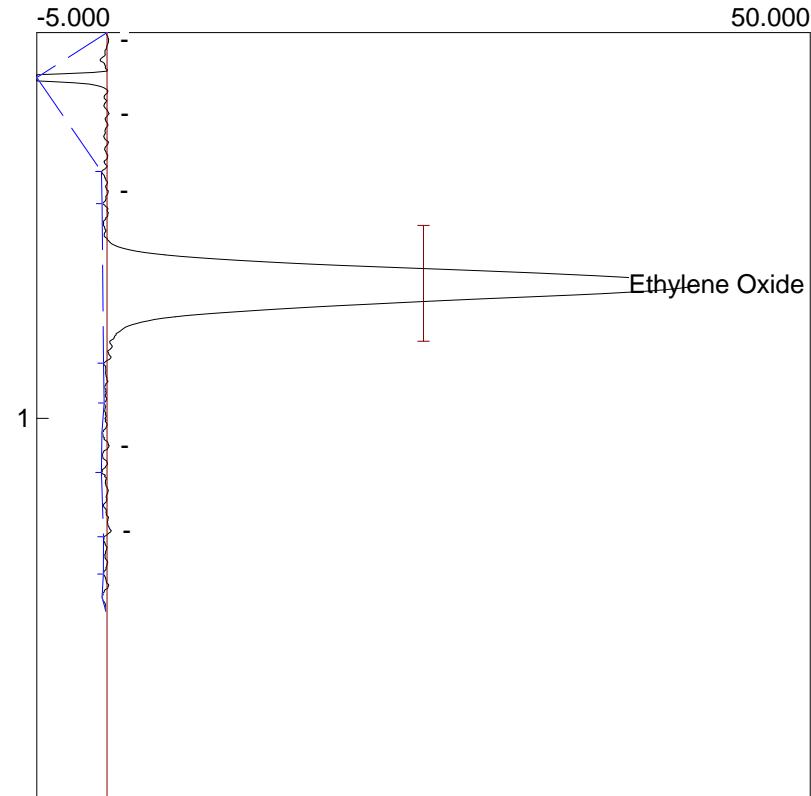
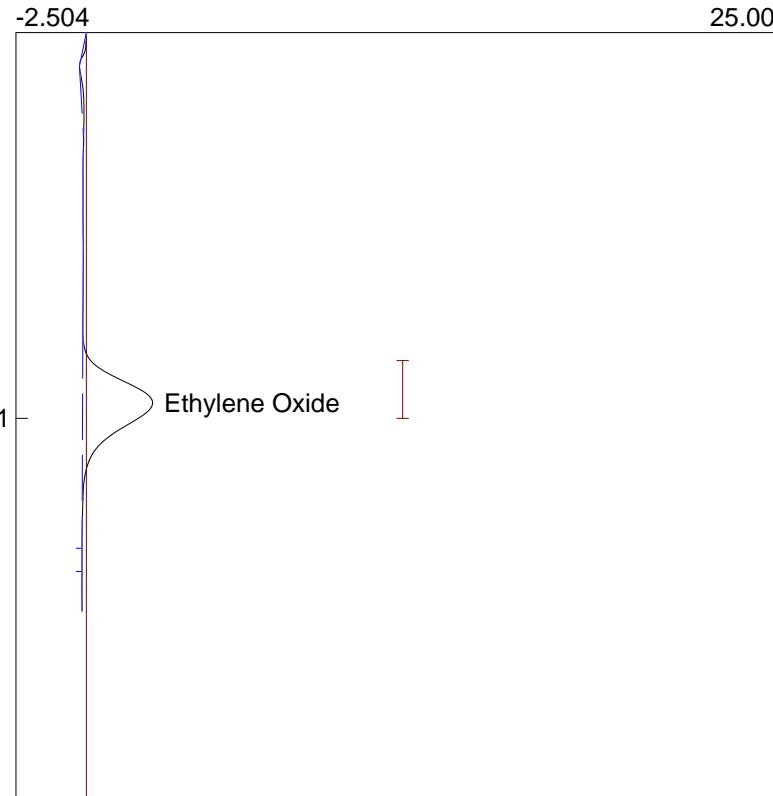
Carrier: UHP 99.99999% Helium AT 18 PSI

Data file: BSCI_PID_647.()

Sample: LESNI MIDPOINT

Operator: L Christopher Heilner

Comments: 100ppm Calibration Drift



Number	Component	Retention	Area
0	Ethylene Oxide	0.960	22.2642
1			22.2642

Number	Component	Retention	Area
1	Ethylene Oxide	0.653	248.9456
1			248.9456

ATTACHMENT E
CALCULATIONS

Run 1		Thursday, June 13, 2019			Chamber Temperatures and Pressure with Units					
Chamber Number	units	1	2	3	1	2	3	1	2	3
Run ID		2622	2393	441						
Chamber Volume	V cubic feet	99.23	99.23	198.46						
Standard Molar Volume	SV cubic feet	385.32	385.32	385.32						
Mol. Wt. EO	MWEO # / #-mole	44.05	44.05	44.05						
Mol. Wt.H2O	MWH2O # / #-mole	18	18	18						
Mol. Wt. N2	MWN2 # / #-mole	28	28	28						
Standard Temperature	Tstd degree R	528	528	528						
Standard Barometric Pressure	Pstd inch Hg	29.92	29.92	29.92						
Barometric Pressure	Pbar inch Hg	30.1	30.1	30.1						
Conversion factor millibars to inches Hg		0.0295	0.0295	0.0295						
Conversion factor kg to pounds		2.2046	2.2046	2.2046						
Chamber pressure after nitrogen wash	mbar	71.01599998	66.18966989	67.56862134	1.0	1.0	1.0			
Chamber pressure after nitrogen wash	inch Hg	2.09	1.95	1.99	F F	F F	F F			
Chamber temperature after nitrogen wash	degree C	55.6	59.0	56.1	127.2	137.0	132.1	127.3	136.8	132.1
Chamber temperature after nitrogen wash	degree R	592.1	598.2	593.0						
Volume nitrogen in chamber	cubic feet	7.74	7.29	14.76						
Pound moles nitrogen in chamber		0.02	0.02	0.04						
Mass nitrogen in chamber	pounds	0.63	0.60	1.20						
Chamber pressure after humidification	P mbar	109.6266408	110.3161165	111.6950679	1.6	1.6	1.6			
Chamber pressure after humidification	inch Hg	3.23	3.25	3.30						
Pressure increase due to humidification	P inch Hg	1.14	1.30	1.30	F F	F F	F F			
Chamber temperature after humidification	degree C	55.2	56.3	55.0	128.3	134.5	131.4	127.9	135.1	131.5
Chamber temperature after humidification	degree R	591.4	593.3	591.0						
Volume H2O in chamber	cubic feet	4.21	4.82	9.61						
Pound Moles of H2O at chamber pressure		0.01	0.01	0.02						
Mass H2O at chamber pressure	pounds	0.20	0.23	0.45						
Mass EtO charged to chamber	kg	9	10	18	4.20	4.40	8.30			
Mass EtO charged to chamber	Wc pounds	4.2	4.4	8.3						
Chamber pressure after EtO injection	mbar	682.5809707	684.6493979	674.307262	9.9	9.9	9.8			
Chamber pressure after EtO injection	inch Hg	20.14	20.20	19.89	F F	F F	F F			
Chamber Temperature after EtO injection	degree C	56.7	58.2	57.2	131.8	136.4	134.1	132.7	135.7	134.2
Chamber Temperature after EtO injection	degree R	594.1	596.8	595.0						
Chamber temperature after nitrogen blanket	degree R	594.1	596.8	595.0						
Total Moles N2 in chamber		0.02	0.02	0.04						
Total mass nitrogen in chamber	pounds	0.63	0.60	1.20						
Total volume gas in chamber	std. cubic feet	59.35	59.26	117.09						
Pound Moles EtO injected		0.10	0.10	0.19						
Weight % N2	WN2 %	12.51%	11.45%	12.06%						
Weight % water	WH2O %	3.92%	4.32%	4.52%						
Weight % EtO	WE0 %	83.57%	84.23%	83.42%						
EtO mole fraction	%EOv %	74.06%	74.66%	73.53%						
H2O mole fraction	%H2Ov %	8.50%	9.37%	9.75%						
N2 mole fraction	%N2v %	18.36%	16.90%	17.75%						
Chamber pressure after evacuation	mbar	103.4213592	103.4213592	103.4213592	1.5	1.5	1.5			
Chamber pressure after evacuation	inch Hg	3.050930096	3.050930096	3.050930096	F F	F F	F F			
Chamber temperature after 1st evacuation	degree C	55.6	57.9	56.0	128.8	135.3	132.1	129.5	135.1	132.3
Chamber temperature after 1st evacuation	degree R	592.1	596.3	592.9						
Total volume gas in chamber	std. cubic feet	9.02	8.96	18.02						
Percent chamber gas evacuated	%	84.80%	84.88%	84.61%						
Residual Mass EtO remaining in chamber	Wr pounds	0.64	0.66	1.27						
Mass EtO at Inlet to scrubber	Wi pounds	3.55	3.73	7.01						
Concentration EtO in Lesni Outlet	C ppm	1.0								
Volume gas exiting scrubber	V dscf	3516.6								
Mass EtO exiting scrubber	Wb pounds	0.00040								
Control Device Efficiency	% Eff	%	99.996%							

Boston Scientific Dorado Outlet Volumetric Flow Rate Calculation				
Run No.	One	Date	Thursday, June 13, 2019	
Barometric Pressure	29.95	in Hg	Moisture %	4.50%
Stack (Static) Pressure	0.75	in H ₂ O	mol wt stack gas Md	30.00
Diameter of Stack	4	inch	mol wt stack gas Ms	29.46
Elapsed Time (Minutes)	Stack Differential Pressure ("H ₂ O)	Stack Gas Temperature (°F)	Stack Gas Velocity (FPS)	Stack Gas Volumetric Flow (DSCF)
1353	0.330	211.0	42.36	167.06
1354	0.290	211.0	39.71	156.61
1355	0.310	211.0	41.06	161.92
1356	0.270	212.0	38.34	151.00
1357	0.300	212.0	40.42	159.17
1358	0.250	212.0	36.90	145.30
1359	0.270	212.0	38.34	151.00
1400	0.240	212.0	36.15	142.37
1401	0.260	212.0	37.63	148.18
1402	0.260	212.0	37.63	148.18
1403	0.310	212.0	41.09	161.80
1404	0.270	212.0	38.34	151.00
1405	0.290	213.0	39.77	156.38
1406	0.380	213.0	45.52	179.01
1407	0.290	214.0	39.80	156.26
1408	0.290	215.0	39.83	156.15
1409	0.220	216.0	34.72	135.90
1410	0.250	216.0	37.01	144.87
1411	0.260	218.0	37.80	147.52
1412	0.230	219.0	35.57	138.65
1413	0.260	220.0	37.85	147.31
1414	0.300	220.0	40.66	158.23
1415	0.280	221.0	39.31	152.75
			0.00	0.00
			Total	3516.63
Average		214.3		

Run 2		Friday, June 14, 2019			Chamber Temperatures and Pressure with Units									
		units	1	2	3	1	2	3	1	2	3	1	2	3
Chamber Number														
Run ID			2623	2394	442									
Chamber Volume	V	cubic feet	99.23	99.23	99.23									
Standard Molar Volume	SV	cubic feet	385.32	385.32	385.32									
Mol. Wt. EO	MWEO	# / # mole	44.05	44.05	44.05									
Mol. Wt.H2O	MWH2O	# / # mole	18	18	18									
Mol. Wt. N2	MWN2	# / # mole	28	28	28									
Standard Temperature	Tstd	degree R	528	528	528									
Standard Barometric Pressure	Pstd	inch Hg	29.92	29.92	29.92									
Barometric Pressure	Pbar	inch Hg	30.1	30.1	30.1									
Conversion factor millibars to inches Hg			0.0295	0.0295	0.0295									
Conversion factor kg to pounds			2.2046	2.2046	2.2046	psi			psi			psi		
Chamber pressure after nitrogen wash	mbar	66.18966989	67.56862134	65.50019416	1.0				1.0			1.0		
Chamber pressure after nitrogen wash	inch Hg	1.95	1.99	1.93	F	F			F	F		F	F	
Chamber temperature after nitrogen wash	degree C	55.1	56.6	55.1	126.9	135.6	131.3		127.9	132.4	130.2	128.4	133.8	131.1
Chamber temperature after nitrogen wash	degree R	591.3	593.8	591.1										
Volume nitrogen in chamber	cubic feet	7.21	7.39	7.13										
Pound moles nitrogen in chamber		0.02	0.02	0.02										
Mass nitrogen in chamber	pounds	0.58	0.60	0.58	psi			psi			psi			
Chamber pressure after humidification	P	mbar	109.6266408	111.0055922	111.6950679	1.6			1.6			1.6		
Chamber pressure after humidification	P	inch Hg	3.23	3.27	3.30	F	F		F	F		F	F	
Pressure increase due to humidification	P	inch Hg	1.28	1.28	1.36	127.2	133.1	130.2	127.9	135.1	131.5	127.8	139.6	133.7
Chamber temperature after humidification	degree C	54.5	59.8	56.5										
Chamber temperature after humidification	degree R	590.2	599.6	593.7										
Volume H2O in chamber	cubic feet	4.72	4.80	5.05										
Pound Moles of H2O at chamber pressure		0.01	0.01	0.01	lbs			lbs			lbs			
Mass H2O at chamber pressure	pounds	0.22	0.22	0.24	4.30			4.40			8.80			
Mass EtO charged to chamber	kg	9	10	19	psi			psi			psi			
Mass EtO charged to chamber	Wc	pounds	4.3	4.4	8.8	9.9		10.0			9.8			
Chamber pressure after EtO injection	mbar	680.5125435	688.0967765	677.7546406	F	F		F	F		F	F		
Chamber pressure after EtO injection	inch Hg	20.08	20.30	19.99	132.3	136.4	134.4	133.0	135.7	134.4	132.9	137.7	135.3	
Chamber Temperature after EtO injection	degree C	56.9	58.7	57.4										
Chamber Temperature after EtO injection	degree R	594.4	597.7	595.3										
Chamber temperature after nitrogen blanket	degree R	594.4	597.7	595.3										
Total Moles N2 in chamber		0.02	0.02	0.02										
Total mass nitrogen in chamber	pounds	0.58	0.60	0.58	psi			psi			psi			
Total volume gas in chamber	std. cubic feet	59.15	59.47	58.81	1.5			1.5			1.5			
Pound Moles EtO injected		0.10	0.10	0.20	F	F		F	F		F	F		
Weight % N2	WN2	%	11.44%	11.51%	6.01%	132.1	135.3	133.7	130.1	135.7	132.9	129.5	136.3	132.9
Weight % water	WH2O	%	4.33%	4.30%	2.46%									
Weight % EtO	WE0	%	84.23%	84.19%	91.53%									
EtO mole fraction	%EOv	%	74.65%	74.63%	85.54%									
H2O mole fraction	%H2Ov	%	9.39%	9.32%	5.63%									
N2 mole fraction	%N2v	%	16.90%	16.99%	9.14%									
Chamber pressure after evacuation	mbar	103.4213592	103.4213592	103.4213592	1.5			1.5			1.5			
Chamber pressure after evacuation	inch Hg	3.050930096	3.050930096	3.050930096	F	F		F	F		F	F		
Chamber temperature after 1st evacuation	degree C	56.5	57.9	56.1	130.1	135.7	133.7	130.1	135.7	132.9	129.5	136.3	132.9	
Chamber temperature after 1st evacuation	degree R	593.7	596.3	592.9										
Total volume gas in chamber	std. cubic feet	9.00	8.96	9.01										
Percent chamber gas evacuated		%	84.79%	84.93%	84.68%									
Residual Mass EtO remaining in chamber	Wr	pounds	0.65	0.66	1.35									
Mass EtO at Inlet to scrubber	Wi	pounds	3.64	3.73	7.44									
Concentration EtO in Lesni Outlet	C	ppm	1.0											
Volume gas exiting scrubber	V	dscf	2691.5											
Mass EtO exiting scrubber	Wb	pounds	0.00031											
Control Device Efficiency	% Eff	%	99.997%											

Boston Scientific Dorado Outlet Volumetric Flow Rate Calculation				
Run No.	Two	Date	Friday, June 14, 2019	
Barometric Pressure	30.00	in Hg	Moisture %	4.50%
Stack (Static) Pressure	0.75	in H ₂ O	mol wt stack gas Md	30.00
Diameter of Stack	4	inch	mol wt stack gas Ms	29.46
Elapsed Time (Minutes)	Stack Differential Pressure ("H ₂ O)	Stack Gas Temperature (°F)	Stack Gas Velocity (FPS)	Stack Gas Volumetric Flow (DSCF)
131	0.210	206.0	33.67	133.77
132	0.240	206.0	35.99	143.01
133	0.220	206.0	34.46	136.92
134	0.200	206.0	32.85	130.55
135	0.220	206.0	34.46	136.92
136	0.200	206.0	32.85	130.55
137	0.160	206.0	29.39	116.76
138	0.230	206.0	35.23	140.00
139	0.200	206.0	32.85	130.55
140	0.170	206.0	30.29	120.36
141	0.190	207.0	32.05	127.15
142	0.140	208.0	27.53	109.06
143	0.180	209.0	31.24	123.57
144	0.140	210.0	27.57	108.90
145	0.170	213.0	30.45	119.73
146	0.150	213.0	28.60	112.47
147	0.160	215.0	29.58	115.98
148	0.170	217.0	30.54	119.38
149	0.140	218.0	27.73	108.25
150	0.140	220.0	27.78	108.09
151	0.150	222.0	28.79	111.72
152	0.140	223.0	27.84	107.85
			0.00	0.00
			Total	2691.51
		Average	210.7	

Run 3		Friday, June 14, 2019					Chamber Temperatures and Pressure with Units																				
		0	units	1	2	3	1	2	3	1	2	3	min	max	avg	min	max	avg	min	max	avg						
Chamber Number		0	units	1	2	3																					
Run ID				2624	2395	443																					
Chamber Volume	V	cubic feet	99.23	99.23	99.23																						
Standard Molar Volume	SV	cubic feet	385.32	385.32	385.32																						
Mol. Wt. EO	MWEO	# / # mole	44.05	44.05	44.05																						
Mol. Wt.H2O	MWH2O	# / # mole	18	18	18																						
Mol. Wt. N2	MWN2	# / # mole	28	28	28																						
Standard Temperature	Tstd	degree R	528	528	528																						
Standard Barometric Pressure	Pstd	inch Hg	29.92	29.92	29.92																						
Barometric Pressure	Pbar	inch Hg	30.1	30.1	30.1																						
Conversion factor millibars to inches Hg			0.0295	0.0295	0.0295																						
Conversion factor kg to pounds				2.2046	2.2046	2.2046																					
Chamber pressure after nitrogen wash	mbar	66.18966989	68.25809707	65.50019416	1.0																						
Chamber pressure after nitrogen wash	inch Hg	1.95	2.01	1.93	F	F																					
Chamber temperature after nitrogen wash	degree C	55.8	59.2	56.2																							
Chamber temperature after nitrogen wash	degree R	592.5	598.5	593.2																							
Volume nitrogen in chamber	cubic feet	7.22	7.52	7.16																							
Pound moles nitrogen in chamber		0.02	0.02	0.02																							
Mass nitrogen in chamber	pounds	0.59	0.62	0.58																							
Chamber pressure after humidification	P	mbar	109.6266408	110.3161165	111.0055922	1.6																					
Chamber pressure after humidification	P	inch Hg	3.23	3.25	3.27	F	F																				
Pressure increase due to humidification	P	inch Hg	1.28	1.24	1.34																						
Chamber temperature after humidification	degree C	55.4	56.3	55.1																							
Chamber temperature after humidification	degree R	591.7	593.3	591.2																							
Volume H2O in chamber	cubic feet	4.73	4.60	4.95																							
Pound Moles of H2O at chamber pressure		0.01	0.01	0.01																							
Mass H2O at chamber pressure	pounds	0.22	0.21	0.23																							
Mass EtO charged to chamber	kg	10	9	18																							
Mass EtO charged to chamber	Wc	pounds	4.6	4.3	8.3																						
Chamber pressure after EtO injection	mbar	679.8230678	682.5809707	674.9967377	9.9																						
Chamber pressure after EtO injection	inch Hg	20.05	20.14	19.91	F	F																					
Chamber Temperature after EtO injection	degree C	58.5	58.2	57.2																							
Chamber Temperature after EtO injection	degree R	597.4	596.8	595.0																							
Chamber temperature after nitrogen blanket	degree R	597.4	596.8	595.0																							
Total Moles N2 in chamber		0.02	0.02	0.02																							
Total mass nitrogen in chamber	pounds	0.59	0.62	0.58																							
Total volume gas in chamber	std. cubic feet	58.79	59.08	58.60																							
Pound Moles EtO injected		0.10	0.10	0.19																							
Weight % N2	WN2	%	10.85%	12.03%	6.38%																						
Weight % water	WH2O	%	4.10%	4.19%	2.54%																						
Weight % EtO	WE0	%	85.05%	83.78%	91.07%																						
EtO mole fraction	%EOv	%	75.84%	74.17%	84.84%																						
H2O mole fraction	%H2Ov	%	8.94%	9.08%	5.80%																						
N2 mole fraction	%N2v	%	16.07%	17.70%	9.69%																						
Chamber pressure after evacuation	mbar	103.4213592	103.4213592	103.4213592	1.5																						
Chamber pressure after evacuation	inch Hg	3.050930096	3.050930096	3.050930096	F	F																					
Chamber temperature after 1st evacuation	degree C	55.8	57.8	56.0																							
Chamber temperature after 1st evacuation	degree R	592.4	596.0	592.8																							
Total volume gas in chamber	std. cubic feet	9.02	8.96	9.01																							
Percent chamber gas evacuated		%	84.66%	84.83%	84.62%																						
Residual Mass EtO remaining in chamber	Wr	pounds	0.70	0.65	1.27																						
Mass EtO at Inlet to scrubber	Wi	pounds	3.89	3.64	7.01																						
Concentration EtO in Lesni Outlet	C	ppm	1.0																								
Volume gas exiting scrubber	V	dscf	3360.2																								
Mass EtO exiting scrubber	Wb	pounds	0.00038																								
Control Device Efficiency	% Eff	%	99.996%																								

Boston Scientific Dorado Outlet Volumetric Flow Rate Calculation				
Run No.	Three	Date	Friday, June 14, 2019	
Barometric Pressure	29.95	in Hg	Moisture %	4.50%
Stack (Static) Pressure	0.75	in H ₂ O	mol wt stack gas Md	29.00
Diameter of Stack	4	inch	mol wt stack gas Ms	28.51
Elapsed Time (Minutes)	Stack Differential Pressure ("H ₂ O)	Stack Gas Temperature (°F)	Stack Gas Velocity (FPS)	Stack Gas Volumetric Flow (DSCF)
1306	0.310	216.0	41.21	161.32
1307	0.310	216.0	41.21	161.32
1308	0.290	216.0	39.86	156.03
1309	0.290	216.0	39.86	156.03
1310	0.340	216.0	43.16	168.95
1311	0.320	216.0	41.87	163.90
1312	0.310	216.0	41.21	161.32
1313	0.280	216.0	39.16	153.32
1314	0.320	217.0	41.90	163.78
1315	0.330	217.0	42.55	166.32
1316	0.310	217.0	41.24	161.20
1317	0.340	219.0	43.25	168.57
1318	0.290	220.0	39.98	155.57
1319	0.280	221.0	39.31	152.75
1320	0.320	222.0	42.05	163.18
1321	0.300	224.0	40.78	157.77
1322	0.300	225.0	40.81	157.65
1323	0.330	227.0	42.86	165.11
1324	0.310	228.0	41.57	159.91
1325	0.270	229.0	38.83	149.13
1326	0.300	230.0	40.96	157.08
3360.23				
Average 220.2				

ATTACHMENT F
PROCESS RUN RECORDS



Sterilization Chamber Number 1 Cycle Report
Summary

Description: Lesni eff test
 Cycle Number: Lesni eff test
 Operator: scada

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 2622
 PLC Version: 1
 SCADA Version: V1.50

PreHeat
 Start 13-Jun-19 04:48:32 15.16 psia
 End 13-Jun-19 05:53:53 14.09 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	123.4	134.8
Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:05:21
Humidity	% rh	0.0	90.0	13.7	39.3

Vacuum
 Start 13-Jun-19 05:53:53 14.09 psia
 End 13-Jun-19 06:05:46 0.91 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	126.7	134.8
Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:53
Absolute Pressure	psia	0.60	1.20	n/a	0.91

Leak Test
 Start 13-Jun-19 06:05:46 0.91 psia
 End 13-Jun-19 06:17:49 1.03 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.3	133.1
Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
Differential Pressure	psi	0.00	0.70	n/a	0.12

Dilution
 Start 13-Jun-19 06:17:49 1.03 psia
 End 13-Jun-19 06:48:01 1.00 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.2	137.0
Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:30:12
Max Absolute Pressure	psia	0.70	12.80	n/a	12.54
Min Absolute Pressure	psia	0.70	12.80	n/a	1.03

Humidification
 Start 13-Jun-19 06:48:01 1.00 psia
 End 13-Jun-19 06:51:04 2.59 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.3	134.5
Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:04
Differential Pressure	psi	1.00	2.00	n/a	1.59

Humidity Dwell
 Start 13-Jun-19 06:51:04 2.59 psia
 End 13-Jun-19 10:11:08 2.15 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	131.8	135.6
Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
Absolute Pressure	psia	1.60	3.60	n/a	2.15
Humidity	% rh	30.0	90.0	36.8	56.0
Load Temperature	°F	130.0	145.0	136.8	141.8

Gas A
 Start 13-Jun-19 10:11:08 2.15 psia
 End 13-Jun-19 10:15:37 3.89 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.9	135.9
Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:29
Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
Differential Pressure	psi	1.00	3.00	n/a	1.74

Gas B Start 13-Jun-19 10:15:37 3.89 psia End 13-Jun-19 10:39:49 9.90 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	131.8	136.4
Elapsed Time	HH:MM:SS	00:15:00	00:30:00		n/a	00:24:12
Absolute Pressure	psia		8.80	10.80	n/a	9.90
Differential Pressure	psi		4.10	6.10	n/a	6.01
EO Weight	lbs		2.0	7.0	n/a	4.2

Gas Dwell Start 13-Jun-19 10:39:49 9.90 psia End 13-Jun-19 13:54:52 10.45 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	131.8	135.3
Elapsed Time	HH:MM:SS	03:15:00	03:20:00		n/a	03:15:03
Absolute Pressure	psia		8.80	10.80	n/a	10.45
Humidity	% rh		30.0	90.0	51.7	68.3
Load Temperature	°F		130.0	145.0	135.1	138.8
EO Concentration	mg/l		550.0	750.0	685.2	695.8

Post Vacuum Start 13-Jun-19 13:54:52 10.45 psia End 13-Jun-19 14:14:22 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	128.8	135.3
Elapsed Time	HH:MM:SS	00:15:00	01:00:00		n/a	00:19:30
Absolute Pressure	psia		1.20	1.80	n/a	1.50

Gas Wash A Start 13-Jun-19 14:14:22 1.50 psia End 13-Jun-19 14:53:00 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	128.9	137.3
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:38
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash B Start 13-Jun-19 14:53:00 1.50 psia End 13-Jun-19 15:31:40 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.9	137.3
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:40
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash C Start 13-Jun-19 15:31:40 1.50 psia End 13-Jun-19 16:10:18 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.7	137.3
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:38
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Equalization Start 13-Jun-19 16:10:18 1.50 psia End 13-Jun-19 16:18:57 14.16 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.7	138.9
Elapsed Time	HH:MM:SS	00:07:00	00:40:00		n/a	00:08:39
Absolute Pressure	psia		13.00	15.00	n/a	14.16

Total Gas Used = 4.3 lbs

Unloading Operator = scada

Total Cycle Time = 11:32:25

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:



Sterilization Chamber Number 2 Cycle Report
Summary

Description: Lesni eff test
 Cycle Number: Lesni eff test
 Operator: scada

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 2393
 PLC Version: 1
 SCADA Version: V1.50

PreHeat	
Start	13-Jun-19 04:49:04 15.27 psia
End	13-Jun-19 05:55:26 14.16 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	126.2	134.9
Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:06:22
Humidity	% rh	0.0	90.0	17.0	45.8

Vacuum	
Start	13-Jun-19 05:55:26 14.16 psia
End	13-Jun-19 06:06:45 0.91 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	126.7	134.9
Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:19
Absolute Pressure	psia	0.60	1.20	n/a	0.91

Leak Test	
Start	13-Jun-19 06:06:45 0.91 psia
End	13-Jun-19 06:18:48 0.96 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.6	132.4
Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
Differential Pressure	psi	0.00	0.70	n/a	0.05

Dilution	
Start	13-Jun-19 06:18:48 0.96 psia
End	13-Jun-19 06:48:41 1.00 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.3	136.8
Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:29:53
Max Absolute Pressure	psia	0.70	12.80	n/a	12.50
Min Absolute Pressure	psia	0.70	12.80	n/a	0.96

Humidification	
Start	13-Jun-19 06:48:41 1.00 psia
End	13-Jun-19 06:51:44 2.60 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.9	135.1
Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
Differential Pressure	psi	1.00	2.00	n/a	1.60

Humidity Dwell	
Start	13-Jun-19 06:51:44 2.60 psia
End	13-Jun-19 10:11:47 2.08 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.7	135.4
Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
Absolute Pressure	psia	1.60	3.60	n/a	2.08
Humidity	% rh	30.0	90.0	41.3	64.5
Load Temperature	°F	130.0	145.0	135.3	141.5

Gas A	
Start	13-Jun-19 10:11:47 2.08 psia
End	13-Jun-19 10:16:29 3.89 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	133.3	135.4
Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:42
Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
Differential Pressure	psi	1.00	3.00	n/a	1.81

Gas B Start 13-Jun-19 10:16:29 3.89 psia End 13-Jun-19 10:40:34 9.93 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	132.7	135.7
Elapsed Time	HH:MM:SS	00:15:00	00:30:00		n/a	00:24:05
Absolute Pressure	psia		8.80	10.80	n/a	9.93
Differential Pressure	psi		4.10	6.10	n/a	6.04
EO Weight	lbs		2.0	7.0	n/a	4.4

Gas Dwell Start 13-Jun-19 10:40:34 9.93 psia End 13-Jun-19 13:55:37 10.44 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	132.7	135.1
Elapsed Time	HH:MM:SS	03:15:00	03:20:00		n/a	03:15:03
Absolute Pressure	psia		8.80	10.80	n/a	10.44
Humidity	% rh		30.0	90.0	56.8	74.0
Load Temperature	°F		130.0	145.0	135.6	138.5
EO Concentration	mg/l		550.0	750.0	667.6	679.7

Post Vacuum Start 13-Jun-19 13:55:37 10.44 psia End 13-Jun-19 14:15:10 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.5	135.1
Elapsed Time	HH:MM:SS	00:15:00	01:00:00		n/a	00:19:33
Absolute Pressure	psia		1.20	1.80	n/a	1.50

Gas Wash A Start 13-Jun-19 14:15:10 1.50 psia End 13-Jun-19 14:53:46 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.8	136.8
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:36
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash B Start 13-Jun-19 14:53:46 1.50 psia End 13-Jun-19 15:32:27 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.1	136.8
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:41
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash C Start 13-Jun-19 15:32:27 1.50 psia End 13-Jun-19 16:11:00 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.1	136.8
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:33
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Equalization Start 13-Jun-19 16:11:00 1.50 psia End 13-Jun-19 16:19:38 14.15 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.1	138.7
Elapsed Time	HH:MM:SS	00:07:00	00:40:00		n/a	00:08:38
Absolute Pressure	psia		13.00	15.00	n/a	14.15

Total Gas Used = 4.4 lbs

Unloading Operator = scada

Total Cycle Time = 11:33:03

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date: →



Sterilization Chamber Number 3 Cycle Report
Summary

Description: Lesni eff test
 Cycle Number: Lesni eff test
 Operator: getinge

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 441
 PLC Version: 1
 SCADA Version: V2.00.45185

PreHeat	
Start	13/06/2019 04:49:04 15.03 psia
End	13/06/2019 05:54:06 14.26 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	125.9	135.5
Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:05:01
Humidity	% rh	0.0	90.0	17.7	47.6

Vacuum	
Start	13/06/2019 05:54:06 14.26 psia
End	13/06/2019 06:06:00 0.92 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.3	135.5
Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:54
Absolute Pressure	psia	0.60	1.20	n/a	0.92

Leak Test	
Start	13/06/2019 06:06:00 0.92 psia
End	13/06/2019 06:18:02 0.98 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.6	133.0
Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
Differential Pressure	psi	0.00	0.70	n/a	0.06

Dilution	
Start	13/06/2019 06:18:02 0.98 psia
End	13/06/2019 06:48:04 1.00 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.8	138.2
Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:30:01
Max Absolute Pressure	psia	0.70	12.80	n/a	12.50
Min Absolute Pressure	psia	0.70	12.80	n/a	0.98

Humidification	
Start	13/06/2019 06:48:04 1.00 psia
End	13/06/2019 06:51:07 2.62 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.7	133.3
Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
Differential Pressure	psi	1.00	2.00	n/a	1.62

Humidity Dwell	
Start	13/06/2019 06:51:07 2.62 psia
End	13/06/2019 10:11:09 2.17 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.3	134.4
Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
Absolute Pressure	psia	1.60	3.60	n/a	2.17
Humidity	% rh	30.0	90.0	48.3	61.8
Load Temperature	°F	130.0	145.0	136.2	140.7

Gas A	
Start	13/06/2019 10:11:09 2.17 psia
End	13/06/2019 10:15:31 3.89 psia

Specifications					
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	133.1	135.5
Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:21
Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
Differential Pressure	psi	1.00	3.00	n/a	1.72

Gas B Start 13/06/2019 10:15:31 3.89 psia End 13/06/2019 10:39:32 9.78 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	133.2	136.8	
Elapsed Time	HH:MM:SS	00:15:00	00:30:00	n/a	00:24:01	
Absolute Pressure	psia	8.80	10.80	n/a	9.78	
Differential Pressure	psi	4.10	6.10	n/a	5.89	
EO Weight	lbs	2.0	10.0	n/a	8.3	

Gas Dwell Start 13/06/2019 10:39:32 9.78 psia End 13/06/2019 13:54:35 10.05 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.8	136.3	
Elapsed Time	HH:MM:SS	03:15:00	03:20:00	n/a	03:15:03	
Absolute Pressure	psia	8.80	10.80	n/a	10.05	
Humidity	% rh	30.0	90.0	60.8	69.9	
Load Temperature	°F	130.0	145.0	138.1	139.6	
EO Concentration	mg/l	550.0	750.0	638.5	656.7	

Post Vacuum Start 13/06/2019 13:54:35 10.05 psia End 13/06/2019 14:12:56 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.4	136.3	
Elapsed Time	HH:MM:SS	00:15:00	01:00:00	n/a	00:18:21	
Absolute Pressure	psia	1.20	1.80	n/a	1.50	

Gas Wash A Start 13/06/2019 14:12:56 1.50 psia End 13/06/2019 14:51:18 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.6	139.3	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:22	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash B Start 13/06/2019 14:51:18 1.50 psia End 13/06/2019 15:29:44 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.4	139.8	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:26	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash C Start 13/06/2019 15:29:44 1.50 psia End 13/06/2019 16:08:02 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.3	139.8	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:19	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Equalization Start 13/06/2019 16:08:02 1.50 psia End 13/06/2019 16:16:40 14.23 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.4	142.1	
Elapsed Time	HH:MM:SS	00:07:00	00:40:00	n/a	00:08:37	
Absolute Pressure	psia	13.00	15.00	n/a	14.23	

Total Gas Used = 8.4 lbs

Unloading Operator = getinge

Total Cycle Time = 11:31:46

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:



Sterilization Chamber Number 1 Cycle Report

Summary

Description: Lesni eff test 2
 Cycle Number: Lesni eff test 2
 Operator: scada

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 2623
 PLC Version: 1
 SCADA Version: V1.50

PreHeat	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 16:25:57 14.67 psia	Chamber Temperature	°F	120.0	145.0	128.8	135.6
End 13-Jun-19 17:30:52 14.22 psia	Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:04:55
	Humidity	% rh	0.0	90.0	12.4	43.5

Vacuum	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 17:30:52 14.22 psia	Chamber Temperature	°F	120.0	145.0	126.9	135.6
End 13-Jun-19 17:42:49 0.90 psia	Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:57
	Absolute Pressure	psia	0.60	1.20	n/a	0.90

Leak Test	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 17:42:49 0.90 psia	Chamber Temperature	°F	120.0	145.0	128.6	133.1
End 13-Jun-19 17:54:52 0.96 psia	Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
	Differential Pressure	psi	0.00	0.70	n/a	0.06

Dilution	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 17:54:52 0.96 psia	Chamber Temperature	°F	120.0	145.0	127.2	137.3
End 13-Jun-19 18:25:14 1.00 psia	Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:30:22
	Max Absolute Pressure	psia	0.70	12.80	n/a	12.51
	Min Absolute Pressure	psia	0.70	12.80	n/a	0.96

Humidification	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 18:25:14 1.00 psia	Chamber Temperature	°F	120.0	145.0	128.5	134.2
End 13-Jun-19 18:28:17 2.59 psia	Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
	Differential Pressure	psi	1.00	2.00	n/a	1.59

Humidity Dwell	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 18:28:17 2.59 psia	Chamber Temperature	°F	125.0	145.0	131.8	135.4
End 13-Jun-19 21:48:20 2.07 psia	Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
	Absolute Pressure	psia	1.60	3.60	n/a	2.07
	Humidity	% rh	30.0	90.0	36.6	56.8
	Load Temperature	°F	130.0	145.0	136.7	141.8

Gas A	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 21:48:20 2.07 psia	Chamber Temperature	°F	125.0	145.0	132.6	135.9
End 13-Jun-19 21:53:00 3.89 psia	Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:40
	Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
	Differential Pressure	psi	1.00	3.00	n/a	1.82

Gas B Start 13-Jun-19 21:53:00 3.89 psia End 13-Jun-19 22:17:14 9.87 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.3	136.4	
Elapsed Time	HH:MM:SS	00:15:00	00:30:00	n/a	00:24:14	
Absolute Pressure	psia	8.80	10.80	n/a	9.87	
Differential Pressure	psi	4.10	6.10	n/a	5.98	
EO Weight	lbs	2.0	7.0	n/a	4.3	

Gas Dwell Start 13-Jun-19 22:17:14 9.87 psia End 14-Jun-19 01:32:17 10.33 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.1	135.3	
Elapsed Time	HH:MM:SS	03:15:00	03:20:00	n/a	03:15:03	
Absolute Pressure	psia	8.80	10.80	n/a	10.33	
Humidity	% rh	30.0	90.0	50.4	62.9	
Load Temperature	°F	130.0	145.0	135.6	138.8	
EO Concentration	mg/l	550.0	750.0	673.1	685.2	

Post Vacuum Start 14-Jun-19 01:32:17 10.33 psia End 14-Jun-19 01:51:30 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.1	135.6	
Elapsed Time	HH:MM:SS	00:15:00	01:00:00	n/a	00:19:13	
Absolute Pressure	psia	1.20	1.80	n/a	1.50	

Gas Wash A Start 14-Jun-19 01:51:30 1.50 psia End 14-Jun-19 02:30:11 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.1	137.5	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:41	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash B Start 14-Jun-19 02:30:11 1.50 psia End 14-Jun-19 03:08:48 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.2	137.5	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:37	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash C Start 14-Jun-19 03:08:48 1.50 psia End 14-Jun-19 03:47:25 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.9	137.5	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:37	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Equalization Start 14-Jun-19 03:47:25 1.50 psia End 14-Jun-19 03:56:02 14.15 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.9	139.2	
Elapsed Time	HH:MM:SS	00:07:00	00:40:00	n/a	00:08:37	
Absolute Pressure	psia	13.00	15.00	n/a	14.15	

Total Gas Used = 5.0 lbs

Unloading Operator = scada

Total Cycle Time = 11:32:06

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:



STERILIZATION CHAMBER NUMBER 2 CYCLE REPORT

SUMMARY

Description: Lesni eff test 2
 Cycle Number: Lesni eff test 2
 Operator: scada

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 2394
 PLC Version: 1
 SCADA Version: V1.50

PreHeat	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 16:26:30 14.71 psia	Chamber Temperature	°F	120.0	145.0	128.9	135.7
End 13-Jun-19 17:32:00 14.26 psia	Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:05:30
	Humidity	% rh	0.0	90.0	16.5	49.4

Vacuum	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 17:32:00 14.26 psia	Chamber Temperature	°F	120.0	145.0	127.0	135.1
End 13-Jun-19 17:43:33 0.91 psia	Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:33
	Absolute Pressure	psia	0.60	1.20	n/a	0.91

Leak Test	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 17:43:33 0.91 psia	Chamber Temperature	°F	120.0	145.0	127.9	132.4
End 13-Jun-19 17:55:36 0.98 psia	Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
	Differential Pressure	psi	0.00	0.70	n/a	0.07

Dilution	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 17:55:36 0.98 psia	Chamber Temperature	°F	120.0	145.0	127.0	136.8
End 13-Jun-19 18:25:26 1.00 psia	Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:29:50
	Max Absolute Pressure	psia	0.70	12.80	n/a	12.54
	Min Absolute Pressure	psia	0.70	12.80	n/a	0.98

Humidification	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 18:25:26 1.00 psia	Chamber Temperature	°F	120.0	145.0	127.9	135.1
End 13-Jun-19 18:28:29 2.61 psia	Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
	Differential Pressure	psi	1.00	2.00	n/a	1.61

Humidity Dwell	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 18:28:29 2.61 psia	Chamber Temperature	°F	125.0	145.0	132.7	135.6
End 13-Jun-19 21:48:32 2.10 psia	Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
	Absolute Pressure	psia	1.60	3.60	n/a	2.10
	Humidity	% rh	30.0	90.0	41.7	64.0
	Load Temperature	°F	130.0	145.0	135.6	141.2

Gas A	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 13-Jun-19 21:48:32 2.10 psia	Chamber Temperature	°F	125.0	145.0	133.3	135.7
End 13-Jun-19 21:53:01 3.89 psia	Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:29
	Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
	Differential Pressure	psi	1.00	3.00	n/a	1.79

Gas B Start 13-Jun-19 21:53:01 3.89 psia End 13-Jun-19 22:17:27 9.98 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	133.0	135.7	
Elapsed Time	HH:MM:SS	00:15:00	00:30:00	n/a	00:24:26	
Absolute Pressure	psia	8.80	10.80	n/a	9.98	
Differential Pressure	psi	4.10	6.10	n/a	6.09	
EO Weight	lbs	2.0	7.0	n/a	4.4	

Gas Dwell Start 13-Jun-19 22:17:27 9.98 psia End 14-Jun-19 01:32:30 10.51 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	133.0	135.7	
Elapsed Time	HH:MM:SS	03:15:00	03:20:00	n/a	03:15:03	
Absolute Pressure	psia	8.80	10.80	n/a	10.51	
Humidity	% rh	30.0	90.0	57.4	74.5	
Load Temperature	°F	130.0	145.0	135.6	138.8	
EO Concentration	mg/l	550.0	750.0	678.2	693.2	

Post Vacuum Start 14-Jun-19 01:32:30 10.51 psia End 14-Jun-19 01:52:19 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.1	135.6	
Elapsed Time	HH:MM:SS	00:15:00	01:00:00	n/a	00:19:49	
Absolute Pressure	psia	1.20	1.80	n/a	1.50	

Gas Wash A Start 14-Jun-19 01:52:19 1.50 psia End 14-Jun-19 02:30:58 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.1	137.1	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:39	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash B Start 14-Jun-19 02:30:58 1.50 psia End 14-Jun-19 03:09:36 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.3	137.4	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:38	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash C Start 14-Jun-19 03:09:36 1.50 psia End 14-Jun-19 03:48:11 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.3	137.1	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:35	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Equalization Start 14-Jun-19 03:48:11 1.50 psia End 14-Jun-19 03:56:47 14.13 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.3	139.0	
Elapsed Time	HH:MM:SS	00:07:00	00:40:00	n/a	00:08:36	
Absolute Pressure	psia	13.00	15.00	n/a	14.13	

Total Gas Used = 4.5 lbs

Unloading Operator = scada

Total Cycle Time = 11:32:41

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:



Sterilization Chamber Number 3 Cycle Report
Summary

Description: Lesni eff test 2
 Cycle Number: Lesni eff test 2
 Operator: getinge

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 442
 PLC Version: 1
 SCADA Version: V2.00.45185

PreHeat	
Start	13/06/2019 16:26:07
End	13/06/2019 17:30:32
Chamber Temperature	14.82 psia
Elapsed Time	
Humidity	

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	125.4	136.8
Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:04:24
Humidity	% rh	0.0	90.0	15.3	49.0

Vacuum	
Start	13/06/2019 17:30:32
End	13/06/2019 17:42:24
Absolute Pressure	0.91 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.1	136.3
Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:53
Absolute Pressure	psia	0.60	1.20	n/a	0.91

Leak Test	
Start	13/06/2019 17:42:24
End	13/06/2019 17:54:27
Differential Pressure	0.91 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.4	133.8
Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
Differential Pressure	psi	0.00	0.70	n/a	0.04

Dilution	
Start	13/06/2019 17:54:27
End	13/06/2019 18:24:40
Max Absolute Pressure	0.95 psia
Min Absolute Pressure	1.00 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.8	139.6
Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:30:13
Max Absolute Pressure	psia	0.70	12.80	n/a	12.51
Min Absolute Pressure	psia	0.70	12.80	n/a	0.95

Humidification	
Start	13/06/2019 18:24:40
End	13/06/2019 18:27:43
Absolute Pressure	1.00 psia
Humidity	2.62 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.6	134.3
Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
Differential Pressure	psi	1.00	2.00	n/a	1.62

Humidity Dwell	
Start	13/06/2019 18:27:43
End	13/06/2019 21:47:45
Absolute Pressure	2.62 psia
Humidity	2.23 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	131.2	135.5
Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
Absolute Pressure	psia	1.60	3.60	n/a	2.23
Humidity	% rh	30.0	90.0	49.8	64.7
Load Temperature	°F	130.0	145.0	136.4	140.4

Gas A	
Start	13/06/2019 21:47:45
End	13/06/2019 21:52:04
Absolute Pressure	2.23 psia
Humidity	3.89 psia

Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.9	136.6
Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:18
Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
Differential Pressure	psi	1.00	3.00	n/a	1.66

Gas B Start 13/06/2019 21:52:04 3.89 psia End 13/06/2019 22:16:03 9.83 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.9	137.7	
Elapsed Time	HH:MM:SS	00:15:00	00:30:00	n/a	00:23:59	
Absolute Pressure	psia	8.80	10.80	n/a	9.83	
Differential Pressure	psi	4.10	6.10	n/a	5.94	
EO Weight	lbs	2.0	10.0	n/a	8.8	

Gas Dwell Start 13/06/2019 22:16:03 9.83 psia End 14/06/2019 01:31:06 10.08 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.9	136.3	
Elapsed Time	HH:MM:SS	03:15:00	03:20:00	n/a	03:15:03	
Absolute Pressure	psia	8.80	10.80	n/a	10.08	
Humidity	% rh	30.0	90.0	61.9	70.7	
Load Temperature	°F	130.0	145.0	138.1	139.6	
EO Concentration	mg/l	550.0	750.0	643.0	661.1	

Post Vacuum Start 14/06/2019 01:31:06 10.08 psia End 14/06/2019 01:50:03 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.5	136.3	
Elapsed Time	HH:MM:SS	00:15:00	01:00:00	n/a	00:18:57	
Absolute Pressure	psia	1.20	1.80	n/a	1.50	

Gas Wash A Start 14/06/2019 01:50:03 1.50 psia End 14/06/2019 02:28:25 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	129.5	139.7	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:22	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash B Start 14/06/2019 02:28:25 1.50 psia End 14/06/2019 03:06:45 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.6	139.3	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:21	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Gas Wash C Start 14/06/2019 03:06:45 1.50 psia End 14/06/2019 03:45:09 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.6	139.0	
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:23	
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00	
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50	

Equalization Start 14/06/2019 03:45:09 1.50 psia End 14/06/2019 03:53:45 14.22 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	130.4	141.3	
Elapsed Time	HH:MM:SS	00:07:00	00:40:00	n/a	00:08:36	
Absolute Pressure	psia	13.00	15.00	n/a	14.22	

Total Gas Used = 8.8 lbs

Unloading Operator = getinge

Total Cycle Time = 11:31:03

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:

RUN 3 CHAMBER 7

**Boston
Scientific**Sterilization Chamber Number 1 Cycle Report
Summary

Description: Lesni eff test 3
 Cycle Number: Lesni eff test 3
 Operator: scada

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 2624
 PLC Version: 1
 SCADA Version: V1.50

PreHeat	
Start	14-Jun-19 04:00:43 14.77 psia
End	14-Jun-19 05:05:32 14.21 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.8	135.9
Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:04:49
Humidity	% rh	0.0	90.0	10.4	42.9

Vacuum	
Start	14-Jun-19 05:05:32 14.21 psia
End	14-Jun-19 05:17:25 0.90 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.5	135.9
Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:53
Absolute Pressure	psia	0.60	1.20	n/a	0.90

Leak Test	
Start	14-Jun-19 05:17:25 0.90 psia
End	14-Jun-19 05:29:29 0.96 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.9	133.4
Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
Differential Pressure	psi	0.00	0.70	n/a	0.06

Dilution	
Start	14-Jun-19 05:29:29 0.96 psia
End	14-Jun-19 05:59:47 1.00 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	127.4	137.6
Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:30:19
Max Absolute Pressure	psia	0.70	12.80	n/a	12.55
Min Absolute Pressure	psia	0.70	12.80	n/a	0.96

Humidification	
Start	14-Jun-19 05:59:47 1.00 psia
End	14-Jun-19 06:02:50 2.59 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	120.0	145.0	128.6	134.8
Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
Differential Pressure	psi	1.00	2.00	n/a	1.59

Humidity Dwell	
Start	14-Jun-19 06:02:50 2.59 psia
End	14-Jun-19 09:22:53 2.16 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.1	135.3
Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
Absolute Pressure	psia	1.60	3.60	n/a	2.16
Humidity	% rh	30.0	90.0	36.2	56.6
Load Temperature	°F	130.0	145.0	136.7	141.8

Gas A	
Start	14-Jun-19 09:22:53 2.16 psia
End	14-Jun-19 09:27:18 3.89 psia

Parameters	UOM	Specifications		Actual Value Attained	
		Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F	125.0	145.0	132.6	135.9
Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:25
Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
Differential Pressure	psi	1.00	3.00	n/a	1.73

Gas B Start 14-Jun-19 09:27:18 3.89 psia End 14-Jun-19 09:51:31 9.86 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	132.4	136.2
Elapsed Time	HH:MM:SS	00:15:00	00:30:00		n/a	00:24:13
Absolute Pressure	psia		8.80	10.80	n/a	9.86
Differential Pressure	psi		4.10	6.10	n/a	5.97
EO Weight	lbs		2.0	7.0	n/a	4.6

Gas Dwell Start 14-Jun-19 09:51:31 9.86 psia End 14-Jun-19 13:06:34 10.31 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	132.3	135.3
Elapsed Time	HH:MM:SS	03:15:00	03:20:00		n/a	03:15:03
Absolute Pressure	psia		8.80	10.80	n/a	10.31
Humidity	% rh		30.0	90.0	51.7	64.9
Load Temperature	°F		130.0	145.0	135.9	138.8
EO Concentration	mg/l		550.0	750.0	677.5	691.2

Post Vacuum Start 14-Jun-19 13:06:34 10.31 psia End 14-Jun-19 13:25:47 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.1	135.6
Elapsed Time	HH:MM:SS	00:15:00	01:00:00		n/a	00:19:13
Absolute Pressure	psia		1.20	1.80	n/a	1.50

Gas Wash A Start 14-Jun-19 13:25:47 1.50 psia End 14-Jun-19 14:04:27 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.1	137.5
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:40
Max Absolute Pressure	psia		1.20	13.30	n/a	12.99
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash B Start 14-Jun-19 14:04:27 1.50 psia End 14-Jun-19 14:43:08 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.0	137.5
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:38:41
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash C Start 14-Jun-19 14:43:08 1.50 psia End 14-Jun-19 15:38:46 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.0	137.5
Elapsed Time	HH:MM:SS	00:35:00	01:00:00		n/a	00:55:38
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Equalization Start 14-Jun-19 15:38:46 1.50 psia End 14-Jun-19 15:47:26 14.16 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.0	139.2
Elapsed Time	HH:MM:SS	00:07:00	00:40:00		n/a	00:08:40
Absolute Pressure	psia		13.00	15.00	n/a	14.16

Total Gas Used = 4.7 lbs

Unloading Operator = scada

Total Cycle Time = 11:48:45

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:



Sterilization Chamber Number 2 Cycle Report
Summary

Description: Lesni eff test 3
 Cycle Number: Lesni eff test 3
 Operator: scada

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 2395
 PLC Version: 1
 SCADA Version: V1.50

PreHeat	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 04:01:13 14.99 psia	Chamber Temperature	°F	120.0	145.0	127.9	135.6
End 14-Jun-19 05:06:56 14.32 psia	Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:05:43
	Humidity	% rh	0.0	90.0	14.8	50.7

Vacuum	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 05:06:56 14.32 psia	Chamber Temperature	°F	120.0	145.0	127.3	135.3
End 14-Jun-19 05:18:32 0.91 psia	Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:36
	Absolute Pressure	psia	0.60	1.20	n/a	0.91

Leak Test	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 05:18:32 0.91 psia	Chamber Temperature	°F	120.0	145.0	128.1	132.6
End 14-Jun-19 05:30:35 0.99 psia	Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03
	Differential Pressure	psi	0.00	0.70	n/a	0.08

Dilution	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 05:30:35 0.99 psia	Chamber Temperature	°F	120.0	145.0	127.3	137.1
End 14-Jun-19 06:00:26 1.00 psia	Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:29:51
	Max Absolute Pressure	psia	0.70	12.80	n/a	12.51
	Min Absolute Pressure	psia	0.70	12.80	n/a	0.99

Humidification	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 06:00:26 1.00 psia	Chamber Temperature	°F	120.0	145.0	128.1	135.3
End 14-Jun-19 06:03:29 2.60 psia	Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03
	Differential Pressure	psi	1.00	2.00	n/a	1.60

Humidity Dwell	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 06:03:29 2.60 psia	Chamber Temperature	°F	125.0	145.0	132.8	135.3
End 14-Jun-19 09:23:32 2.28 psia	Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03
	Absolute Pressure	psia	1.60	3.60	n/a	2.28
	Humidity	% rh	30.0	90.0	41.7	63.2
	Load Temperature	°F	130.0	145.0	135.8	141.2

Gas A	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Start 14-Jun-19 09:23:32 2.28 psia	Chamber Temperature	°F	125.0	145.0	133.9	135.4
End 14-Jun-19 09:27:39 3.89 psia	Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:07
	Max Absolute Pressure	psia	2.90	4.90	n/a	3.89
	Differential Pressure	psi	1.00	3.00	n/a	1.61

Gas B Start 14-Jun-19 09:27:39 3.89 psia End 14-Jun-19 09:51:44 9.90 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	133.0	135.7		
Elapsed Time	HH:MM:SS	00:15:00	00:30:00	n/a	00:24:05		
Absolute Pressure	psia	8.80	10.80	n/a	9.90		
Differential Pressure	psi	4.10	6.10	n/a	6.01		
EO Weight	lbs	2.0	7.0	n/a	4.3		

Gas Dwell Start 14-Jun-19 09:51:44 9.90 psia End 14-Jun-19 13:06:47 10.33 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	133.0	135.1		
Elapsed Time	HH:MM:SS	03:15:00	03:20:00	n/a	03:15:03		
Absolute Pressure	psia	8.80	10.80	n/a	10.33		
Humidity	% rh	30.0	90.0	58.8	72.5		
Load Temperature	°F	130.0	145.0	135.6	138.4		
EO Concentration	mg/l	550.0	750.0	678.1	693.2		

Post Vacuum Start 14-Jun-19 13:06:47 10.33 psia End 14-Jun-19 13:26:04 1.50 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	129.8	135.1		
Elapsed Time	HH:MM:SS	00:15:00	01:00:00	n/a	00:19:17		
Absolute Pressure	psia	1.20	1.80	n/a	1.50		

Gas Wash A Start 14-Jun-19 13:26:04 1.50 psia End 14-Jun-19 14:04:44 1.50 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	129.8	136.8		
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:40		
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00		
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50		

Gas Wash B Start 14-Jun-19 14:04:44 1.50 psia End 14-Jun-19 14:43:22 1.50 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	130.3	136.5		
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:38		
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00		
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50		

Gas Wash C Start 14-Jun-19 14:43:22 1.50 psia End 14-Jun-19 15:21:59 1.50 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	130.1	136.8		
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:37		
Max Absolute Pressure	psia	1.20	13.30	n/a	13.00		
Min Absolute Pressure	psia	1.20	13.30	n/a	1.50		

Equalization Start 14-Jun-19 15:21:59 1.50 psia End 14-Jun-19 15:30:37 14.15 psia		Specifications				Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	130.1	138.5		
Elapsed Time	HH:MM:SS	00:07:00	00:40:00	n/a	00:08:38		
Absolute Pressure	psia	13.00	15.00	n/a	14.15		

Total Gas Used = 4.7 lbs

Unloading Operator = scada

Total Cycle Time = 11:31:42

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:



Sterilization Chamber Number 3 Cycle Report
Summary

Description: Lesni eff test 3
 Cycle Number: Lesni eff test 3
 Operator: getinge

Cycle Name: Neuro Maximum Cycle
 Cycle Checksum: 37792830
 Run Number: 443
 PLC Version: 1
 SCADA Version: V2.00.45185

PreHeat	
Start 14/06/2019 04:00:47	14.81 psia
End 14/06/2019 05:05:08	14.26 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	120.0	145.0	130.4	135.7		
Elapsed Time	HH:MM:SS	00:55:00	01:10:00	n/a	01:04:22		
Humidity	% rh	0.0	90.0	12.6	48.4		

Vacuum	
Start 14/06/2019 05:05:08	14.26 psia
End 14/06/2019 05:17:05	0.92 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	120.0	145.0	127.3	135.7		
Elapsed Time	HH:MM:SS	00:09:00	00:30:00	n/a	00:11:56		
Absolute Pressure	psia	0.60	1.20	n/a	0.92		

Leak Test	
Start 14/06/2019 05:17:05	0.92 psia
End 14/06/2019 05:29:08	0.95 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	120.0	145.0	129.0	133.0		
Elapsed Time	HH:MM:SS	00:11:30	00:12:30	n/a	00:12:03		
Differential Pressure	psi	0.00	0.70	n/a	0.03		

Dilution	
Start 14/06/2019 05:29:08	0.95 psia
End 14/06/2019 05:59:14	1.00 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	120.0	145.0	127.8	138.5		
Elapsed Time	HH:MM:SS	00:25:00	00:40:00	n/a	00:30:06		
Max Absolute Pressure	psia	0.70	12.80	n/a	12.52		
Min Absolute Pressure	psia	0.70	12.80	n/a	0.95		

Humidification	
Start 14/06/2019 05:59:14	1.00 psia
End 14/06/2019 06:02:16	2.61 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	120.0	145.0	129.0	133.3		
Elapsed Time	HH:MM:SS	00:00:00	00:10:00	n/a	00:03:03		
Differential Pressure	psi	1.00	2.00	n/a	1.61		

Humidity Dwell	
Start 14/06/2019 06:02:16	2.61 psia
End 14/06/2019 09:22:19	2.14 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	132.5	134.6		
Elapsed Time	HH:MM:SS	03:15:00	03:25:00	n/a	03:20:03		
Absolute Pressure	psia	1.60	3.60	n/a	2.14		
Humidity	% rh	30.0	90.0	47.7	63.0		
Load Temperature	°F	130.0	145.0	136.4	140.7		

Gas A	
Start 14/06/2019 09:22:19	2.14 psia
End 14/06/2019 09:26:42	3.89 psia

Specifications						Actual Value Attained	
Parameters	UOM	Minimum	Maximum	Minimum	Maximum		
Chamber Temperature	°F	125.0	145.0	133.2	135.5		
Elapsed Time	HH:MM:SS	00:03:00	00:10:00	n/a	00:04:22		
Max Absolute Pressure	psia	2.90	4.90	n/a	3.89		
Differential Pressure	psi	1.00	3.00	n/a	1.75		

Gas B Start 14/06/2019 09:26:42 3.89 psia End 14/06/2019 09:50:41 9.79 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	133.2	136.8
Elapsed Time	HH:MM:SS	00:15:00	00:30:00	n/a	00:23:59	
Absolute Pressure	psia		8.80	10.80	n/a	9.79
Differential Pressure	psi		4.10	6.10	n/a	5.90
EO Weight	lbs		2.0	10.0	n/a	8.3

Gas Dwell Start 14/06/2019 09:50:41 9.79 psia End 14/06/2019 13:05:44 10.05 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	132.9	136.0
Elapsed Time	HH:MM:SS	03:15:00	03:20:00	n/a	03:15:03	
Absolute Pressure	psia		8.80	10.80	n/a	10.05
Humidity	% rh		30.0	90.0	59.6	68.2
Load Temperature	°F		130.0	145.0	138.0	139.6
EO Concentration	mg/l		550.0	750.0	640.0	656.6

Post Vacuum Start 14/06/2019 13:05:44 10.05 psia End 14/06/2019 13:24:06 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.5	136.0
Elapsed Time	HH:MM:SS	00:15:00	01:00:00	n/a	00:18:22	
Absolute Pressure	psia		1.20	1.80	n/a	1.50

Gas Wash A Start 14/06/2019 13:24:06 1.50 psia End 14/06/2019 14:02:28 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	129.6	139.6
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:22	
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash B Start 14/06/2019 14:02:28 1.50 psia End 14/06/2019 14:40:54 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.4	139.3
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:26	
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Gas Wash C Start 14/06/2019 14:40:54 1.50 psia End 14/06/2019 15:19:17 1.50 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.3	139.9
Elapsed Time	HH:MM:SS	00:35:00	01:00:00	n/a	00:38:23	
Max Absolute Pressure	psia		1.20	13.30	n/a	13.00
Min Absolute Pressure	psia		1.20	13.30	n/a	1.50

Equalization Start 14/06/2019 15:19:17 1.50 psia End 14/06/2019 15:27:55 14.24 psia	Specifications				Actual Value Attained	
	Parameters	UOM	Minimum	Maximum	Minimum	Maximum
Chamber Temperature	°F		125.0	145.0	130.4	142.1
Elapsed Time	HH:MM:SS	00:07:00	00:40:00	n/a	00:08:38	
Absolute Pressure	psia		13.00	15.00	n/a	14.24

Total Gas Used = 8.4 lbs

Unloading Operator = getinge

Total Cycle Time = 11:28:55

Cycle Completed within Specification	X	
	Yes	No

Reviewed By:	Date:

Reviewed By:	Date:

ATTACHMENT G
OXIDIZER BED TEMPERATURES

CATALYTIC OXIDIZER TEMPERATURE (06 / 2019)

Permit Limit: > 140 °C

35 ▾ entries per page

Date	Daily Avg. Intlet Temp (°C)	Daily Avg. Outlet Temp (°C)
06/01/2019	155.59	152.16
06/02/2019	154.24	150.48
06/03/2019	155.36	163.04
06/04/2019	157.12	168.88
06/05/2019	157.01	168.50
06/06/2019	156.95	167.87
06/07/2019	158.01	163.55
06/08/2019	156.71	154.77
06/09/2019	155.92	152.30
06/10/2019	156.31	163.60
06/11/2019	156.93	166.68
06/12/2019	156.88	168.66
06/13/2019	158.35	174.12
06/14/2019	158.06	186.24
06/15/2019	156.78	169.85
06/16/2019	157.33	156.59
06/17/2019	157.36	165.58
06/18/2019	156.71	169.18
06/19/2019	156.91	172.52
06/20/2019	156.38	176.22
06/21/2019	156.92	172.52
06/22/2019	156.96	167.10
06/23/2019	157.40	164.17
06/24/2019	157.42	163.67
06/25/2019	157.45	163.04
06/26/2019	157.39	163.75
06/27/2019	157.40	162.06
06/28/2019	156.89	163.39
06/29/2019	157.33	163.80
06/30/2019	157.91	154.24

ATTACHMENT H
FIELD NOTES

06-13-19 BSL1 DORADO

06-12-19 SET UP EQUIPMENT & FUNCTION CHECK = OK

DESC	FID-OUTLET			PID- INLET		
	FP	RT	AC	FP	RT	AC
987 ppm LAC	01	0.95	5666270	01	0.653	1807.5260
	02	0.953	5682.0346	03	0.656	1731.1420
	03	0.956	5720.8058	04	0.643	1753.5186
	04	0.943	5748.3868	05	0.653	1762.5949
	05	0.950	5761.3572	06	0.650	1770.1346
	06	0.946	5772.2948	07	0.650	1803.9672
	07	0.946	5772.5153	08	0.653	1796.2705
	08	0.946	5772.3653	09	0.650	1808.6455
	09	0.946	5777.3479	10	0.643	1829.7653
	10	0.940	5811.0672	11	0.646	420.1066
100ppm	11	0.943	785.1674	12	0.646	282.4942
	12	0.943	625.5204	13	0.643	273.6238
	13	0.960	620.6252	14	0.650	265.3401
	14	0.956	612.6387	15	0.653	261.6862
	15	0.950	602.7176	16	0.653	247.1114
	16	0.950	594.2136	17	0.646	256.8717
	17	0.943	588.7128	18	0.646	250.2726
	18	0.946	582.0476	19	0.646	246.7023
	19	0.946	582.0372	20	0.660	172.4454
10 ppm	20	0.940	279.1141	21	0.646	56.2746
	21	0.950	68.2708	22	0.646	195.6884
	22	0.953	66.3508			

06-13-1A BSCI NORADDO CONC.

DSC.	FID			P10		
	R P	R T	A C	F P	R T	A C
10ppm	23	0.950	63.7297	23	0.660	40.9493
	24	0.953	62.1694	24	0.653	48.3558
	25	0.950	60.9683	25	0.653	46.1002
	26	0.953	59.2694	26	0.656	36.2522
	27	0.946	59.0924	27	0.650	46.2403
	28	0.953	58.6490	28	0.653	42.6766
	29	0.956	58.5722	29	0.656	44.4122
	30	0.943	58.6154	30	0.643	44.6014
	31	0.943	58.3264	31	0.655	41.5855
	32	0.953	58.6652	32	0.663	41.2666
1ppm	33	0.950	22.2954	33	0.6	
	34	0.960	5.7812	34	0.750	13.5511
	35	0.946	5.7904	35	0.686	15.2915
	36	0.946	6.2030	36	0.723	19.9562
	37	0.950	4.9763	37	0.760	14.1893
	38	0.940	5.1411	38	0.740	19.9858
	39	0.943	4.9943	39	0.750	18.8332
	40	0.943	5.3442	40	0.756	25.1822
	41					
10ppm DIRS	42	0.943	51.3828			
	43	0.950	52.5783			
	44	0.955	52.8178			
	45	0.946	54.5072			
	46	0.946	54.2334			
	47	0.946	54.5774			
	48	0.946	54.5678			

06-13-19 BSCI CONT.

DESC	FID			P.D.		
	FP	RT	AC	FP	RT	AC
100 ppm D105	49			49		
	50			50		
	51			51		
	52			0.653	237.9989	
	53			0.653	231.0709	
	54			0.653	237.5602	
	55			0.655	244.5201	
NOTE: D105	56					
START SAMPLES						
① 1305						
② 1353	77	0.60		77	0.605	292.4746
ALL 3	78	—		78	0.643	300.7570
CHAMBERS	79	—		79	0.643	289.4230
	80	—		80	0.653	289.4943
	81	—		81	0.653	285.6206
	82	—		82	0.650	286.7702
	83	—		83	0.646	447.0712
	84	—		84	0.633	861.3931
	85	—		85	0.640	1127.4537
	86	—		86	0.646	1374.8146
	87	—		87	0.646	1511.0423
	88	—		88	0.640	1620.2100
	89	—		89	0.640	1827.3166
	90	—		90	0.640	2185.0598
	91	—		91	0.640	2461.3444

06-13-19 BSCI CONT.

FID

P/D

DESC	PP	RT	AC	FP	RT	AC
	92			92	0.640	2604.8742
	93			93	0.630	2670.6944
				94	0.633	2702.0602
				95	0.640	2837.5194
				96	0.630	3423.5513
				97	0.630	4056.3377
				98	0.636	4397.1406
				99	0.636	4539.3780
				100	0.636	4625.5870
				101	0.636	4532.7042
				102	0.640	3846.1036
				103	0.630	3316.5460
				104	0.640	3493.2238
ENDR1@1503104				321	0.636	534.3950
ONSITE @ 1245 320	—			330	0.636	532.9459
ON 6/14/19 320	—			346	0.630	499.2232
START R2 346	—			347	0.646	494.8228
① 0132 347				348	0.640	500.1718
	348			349	0.643	493.8948
	349			350	0.643	669.9900
	350			351	0.650	1506.4052
	351			352	0.640	1986.9365
	352			353	0.640	2432.9804
	353			354	0.636	2676.3270
	354			355	0.636	2636.3288
	355					

06-14-19 BSCE - cont.

DESC.	FID.			PID		
	FP	RT	AC	FP	RT	AC
R2 CONT.	356	—	—	356	0.626	2801.4994
	357	—	—	357	0.626	3331.8106
	358	—	—	358	0.623	3923.5870
	359	—	—	359	0.630	4284.4896
	360	—	—	360	0.636	4443.3722
	361	—	—	361	0.630	4482.0270
	362	—	—	362	0.640	4546.3492
	363	—	—	363	0.636	4755.1952
	364	—	—	364	0.633	4909.1456
	365	—	—	365	0.635	4989.0464
	366	—	—	366	0.636	5005.9122
	367	—	—	367	0.640	5009.5744
0231	368	—	—	368	0.636	4981.7475
GND R2	369	—	—	369	—	—
	370	—	—	370	—	—
	371	—	—	371	—	—
	372	—	—	372	—	—
	373	—	—	373	—	—
	374	—	—	374	—	—
	375	—	—	375	—	—
	376	—	—	376	—	—

06-14-14 BSCI DORADO CONT.

DESC	FID			PID		
	FP	RT	AC	FP	RT	AC
1258	609	—		609	0.643	655.9649
	610			616	0.626	642.4226
1306	611			611	0.626	646.2174
START RI	612			612	0.630	643.0565
	613			613	0.630	641.3849
	614			614	0.633	645.4192
	615			615	0.646	642.4108
	616			616	0.623	639.8298
	617			617	0.626	909.6024
	618			618	0.633	1645.1537
	619			619	0.633	2084.2216
	620			620	0.623	2508.1318
L	621			621	0.616	2657.8637
O	622			622	0.622	2728.7189
C	623			623	0.620	2994.1317
S	624			624	0.630	3627.1516
(625			625	0.620	4200.6030
	626			626	0.636	4325.8280
	627			627	0.626	4886.9013
	628			628	0.636	4716.4088
	629			629	0.620	4846.8496
	630			630	0.640	5147.3856
	631			631	0.623	5322.8985
	632			632	0.623	5325.6286

06-14-14 BSCI CONT.

DESC	FID			PID		
	FP	RT	AC	FP	RT	AC
	634	0.0	0.0	634	0.620	5441.9154
<u>END R3</u>	<u>635</u>			<u>635</u>	<u>0.620</u>	<u>5338.6142</u>
AMBIENT	636			636		
FUUSHES	637			637		
	638			639		
	639			639		
	640			640		
	641			641		
100ppm FID CAL DRIFT	642			642		
	643	0.936	58.4188	643	0.643	258.9722
	644	0.943	58.1316	644	0.643	252.9206
	645	0.943	58.4966	645	0.646	250.3791
	646	0.946	58.6226	646	0.646	249.2756
				647	0.657	248.9456

Boston Scientific-Dorado PR

Run 1 6/13/19. Pbar 29.95

Run 2 6/14/19 Pbar -30.00

Start 1353	DP	Tstack	Start	AP	Tstack
	0.33	211	0131	0.21	206
54	0.29	211	32	0.24	206
55	0.31	211	33	0.22	206
56	0.27	212	34	0.20	206
57	0.30	212	35	0.22	206
58	0.25	212	36	0.20	206
59	0.27	212	37	0.16	206
1400	0.24	212	38	0.23	206
01	0.26	212	39	0.20	206
02	0.26	212	40	0.17	206
03	0.31	212	41	0.19	207
04	0.27	212	42	0.14	208
05	0.29	213	43	0.18	209
06	0.38	213	44	0.14	210
07	0.29	214	45	0.17	213
08	0.29	215	46	0.15	213
09	0.22	216	47	0.16	215
10	0.25	216	48	0.17	217
11	0.26	218	49	0.14	218
12	0.23	219	50	0.14	220
13	0.26	220	51	0.15	222
14	0.30	220	52	0.14	223
End 1415	0.28	221	0153	End 0.016	225
16	0.25	221	(:36 seconds)		

Boston Scientific - Dorado, PR
Run 3 6/14/19 Pbar - 29.95

Start DP TStamp

1306 0.31 216

07 0.31 216

08 0.29 216

09 0.29 216

10 0.34 216

11 0.32 216

12 0.31 216

13 0.28 216

14 0.32 217

15 0.33 217

16 0.31 217

17 0.34 219

18 0.29 220

19 0.28 221

20 0.32 222

21 0.30 224

22 0.30 225

23 0.33 227

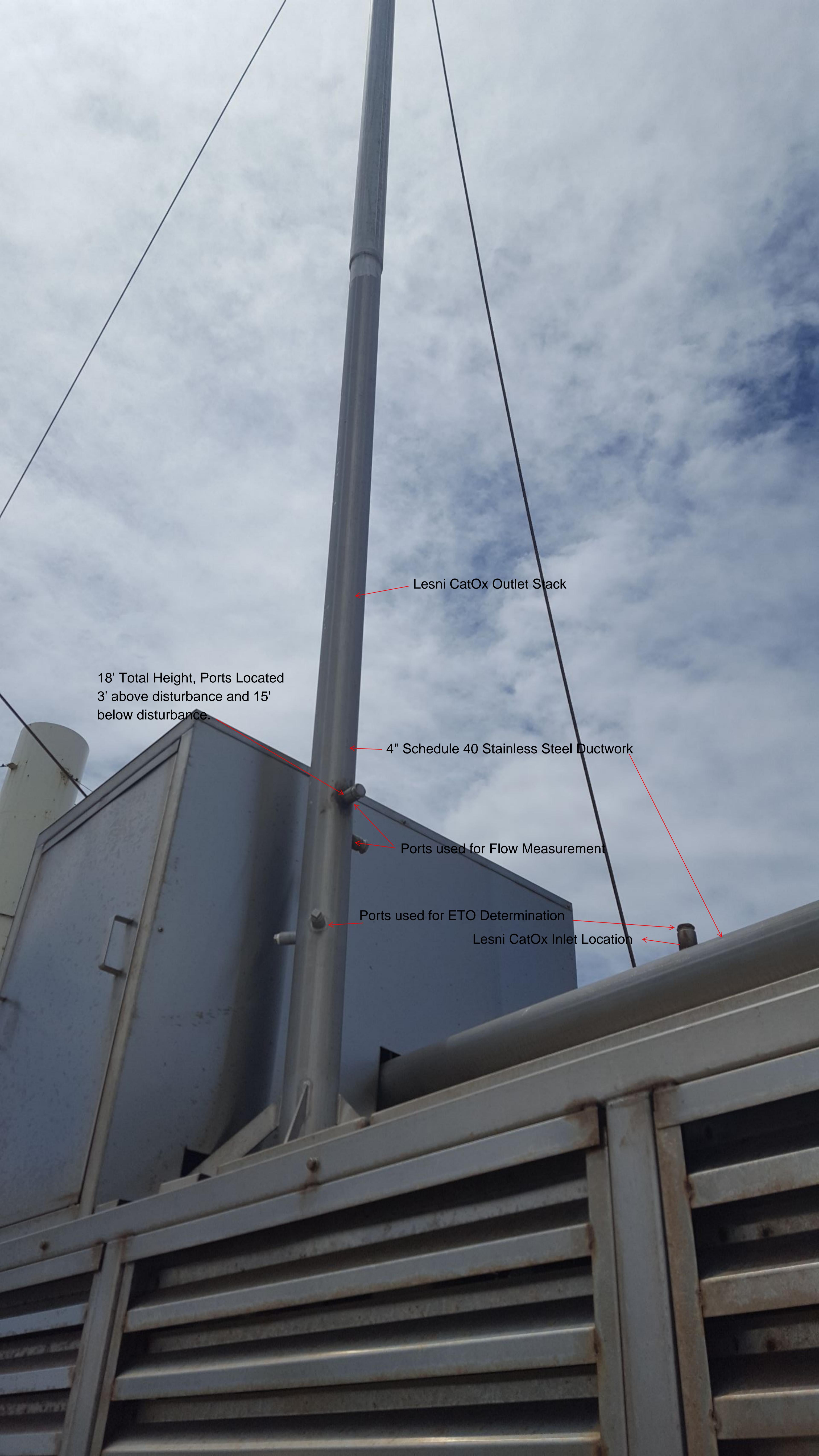
24 0.31 228

25 0.27 229

26 0.30 230

End 1326 0.28 232
(48 seconds)

ATTACHMENT I
STACK SKETCH/PICTURE



ATTACHMENT J
CALIBRATION RECORDS



55 N. 4th Street
Beaumont, TX 77701

CERTIFICATE OF ANALYSIS

Customer:
Gasco Affiliates
5041 Spencer Hwy #801
Pasadena, TX 77505

PO Number: 448335
Reference #: CGS-10-17732 (1 of 5)
Date Filled: 9/28/2018

Customer Part:

Size: 103RAL	Serial Number: CK1343769	Concentration Mole	Analytical Technique Gas Chromatography	Standard type Certified
ETHYLENE OXIDE	75-21-8	1.0	1.0	(+/-) 5 %
NITROGEN	7727-37-9	Balance gas	Balance gas	(+/-) 2 %

Valve Outlet Connection: CGA 180

Actual Pressure (psig) @70F: 1800

Expiration Date: 9/28/2019

Volume SCF (ideal gas at 0°C): 4

Dew Point (F): 32

Instrument
Gas Chromatograph

Make
Varian

Model
CP-3800

This mixture was manufactured gravimetrically on laboratory balances calibrated with N.I.S.T. traceable weights.

Certified By

Coastal Specialty Gas: (800) 852-4177 Fax (409) 835-1522

Reviewed By



55 N. 4th Street
Beaumont, TX 77701

CERTIFICATE OF ANALYSIS

Customer:
Gasco Affiliates
5041 Spencer Hwy #801
Pasadena, TX 77505

PO Number: 448335
Reference #: CGS-10-17732 (2 of 5)
Date Filled: 10/1/2018

Customer Part:

Size: 103RAL	Serial Number: CK1343767	Concentration Mole	Analytical Technique Gas Chromatography		Standard type Certified
Component	CAS Number	Requested Concentration	Certified Mole Concentration	Accuracy	
ETHYLENE OXIDE	75-21-8	10.0	10.0	(+/-) 5 %	
NITROGEN	7727-37-9	Balance gas	Balance gas	(+/-) 2 %	

Valve Outlet Connection: CGA 180

Actual Pressure (psig) @70F: 1800

Expiration Date: 10/1/2019

Volume SCF (ideal gas at 0°C): 4

Dew Point (F): 32

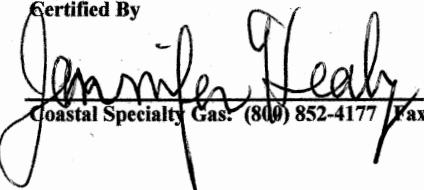
Instrument
Gas Chromatograph

Make
Varian

Model
CP-3800

This mixture was manufactured gravimetrically on laboratory balances calibrated with N.I.S.T. traceable weights.

Certified By


Jennifer Healy
Coastal Specialty Gas. (800) 852-4177 Fax (409) 835-1522

Reviewed By





55 N. 4th Street
Beaumont, TX 77701

CERTIFICATE OF ANALYSIS

Customer:
Gasco Affiliates
5041 Spencer Hwy #801
Pasadena, TX 77505

PO Number: 448335
Reference #: CGS-10-17732 (3 of 5)
Date Filled: 10/1/2018
Customer Part:

Size: 103RAL	Serial Number: CK1343696	Concentration Mole	Analytical Technique Gas Chromatography	Standard type Certified
-----------------	-----------------------------	-----------------------	--------------------------------------------	----------------------------

Component	CAS Number	Requested Concentration	Certified Mole Concentration	Accuracy
ETHYLENE OXIDE	75-21-8	100 ppm	100	(+/-) 2 %
NITROGEN	7727-37-9	Balance gas percent	Balance gas	(+/-) 2 %

Valve Outlet Connection: CGA 180
Actual Pressure (psig) @70F: 1800
Expiration Date: 10/1/2019
Volume SCF (ideal gas at 0°C): 4
Dew Point (F): 32

This mixture was manufactured gravimetrically on laboratory balances calibrated with N.I.S.T. traceable weights.

Certified By

Jennifer Healy
Coastal Specialty Gas: (800) 852-4177 Fax (409) 835-1522

Reviewed By

Kelly Maye



55 N. 4th Street

Beaumont, TX 77701

CERTIFICATE OF ANALYSIS

Customer:
Gasco Affiliates
5041 Spencer Hwy #801
Pasadena, TX 77505

PO Number: 448335
Reference #: CGS-10-17732 (4 of 5)
Date Filled: 10/2/2018

Customer Part:

Size: 103RAL	Serial Number: CK1343697	Concentration Mole	Analytical Technique Gas Chromatography		Standard type Certified
Component	CAS Number	Requested Concentration	Certified Mole Concentration	Accuracy	
ETHYLENE OXIDE	75-21-8	1000 ppm	987	(+/-) 2 %	
NITROGEN	7727-37-9	Balance gas percent	Balance gas	(+/-) 2 %	

Valve Outlet Connection: CGA 180

Actual Pressure (psig) @70F: 1800

Expiration Date: 10/2/2019

Volume SCF (ideal gas at 0°C): .4

Dew Point (F): 32

Instrument
Gas Chromatograph

Make
Varian

Model
CP-3800

This mixture was manufactured gravimetrically on laboratory balances calibrated with N.I.S.T. traceable weights.

Certified By

Coastal Specialty Gas: (800) 852-4177 Fax (409) 835-1522

Reviewed By



CERTIFICATE OF ANALYSIS

Customer:

Gasco Affiliates
5041 Spencer Hwy #801
Pasadena, TX 77505

PO Number: 448335
Reference #: CGS-10-17732 (5 of 5)
Date Filled: 10/10/2018
Customer Part:

Size: 103RAL	Serial Number: CK1343780	Concentration Mole	Analytical Technique Gas Chromatography	Standard type Certified
ETHYLENE OXIDE	75-21-8	5000 ppm	5086 Balance gas	(+/-) 2 %
NITROGEN	7727-37-9	Balance gas percent	Balance gas	(+/-) 2 %

Valve Outlet Connection: CGA 180

Actual Pressure (psig) @70F: 750

Expiration Date: 10/10/2019

Volume SCF (ideal gas at 0°C): 2

Dew Point (F): 32

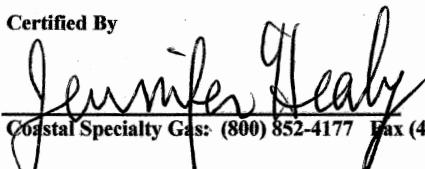
Instrument
Gas Chromatograph

Make
Varian

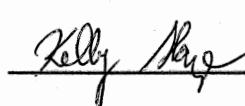
Model
CP-3800

This mixture was manufactured gravimetrically on laboratory balances calibrated with N.I.S.T. traceable weights.

Certified By


Jennifer Healy
Coastal Specialty Gas: (800) 852-4177 Fax (409) 835-1522

Reviewed By


Kelly May

ATTACHMENT K
PROTOCOL AND COMMUNICATIONS



March 3, 2019

Re: Lesni Efficiency Test 2019 Retest

Mr. Ariel Gonzalez
Environmental Health and Safety Manager
Boston Scientific/Guidant Corporation
Road 698 Lot No. 12
Dorado, PR 00646-2602

Dear Mr. Gonzalez:

Attached is one copy of the test protocol for the above referenced testing program. We understand that you will submit the required copies of the protocol to the Puerto Rico Environmental Quality Board for review. Should there be any questions concerning the enclosed protocol, please contact me at (484) 252-4335.

Respectfully,

L. Christopher Heilner, QSTI
Owner, LCH Consulting Associates, LLC

PR EQB Permit PFE-26-1114-1195-1-11-O
Compliance Test Protocol

2019 Lesni Efficiency Test

**Boston Scientific
Road 698 Lot No. 12
Dorado, PR 00646-2602**

March 3, 2019

Prepared for:

Mr. Ariel Gonzalez
Environmental Health and Safety Manager
Boston Scientific/Guidant Puerto Rico BV
Road 698 Lot No. 12
Dorado, PR 00646-2602

For submittal to:

Luis R. Sierra Torres, PE
Chief Inspection and Compliance Division
Air Quality Area
Puerto Rico Environmental Quality Board
Air Quality Division
PO Box 11488
San Juan PR 00910

Prepared by:

L. Christopher Heilner, QSTI
Owner
LCH Consulting Associates, LLC
88 Glocker Way PMB 287
Pottstown, Pennsylvania 19465

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ATTACHMENTS

Equations.....	ATTACHMENT A
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CERTIFICATION OF ACCURACY AND COMPLETION

I, Mr. L. Christopher Heilner, as the LCH Consulting Associates report author, certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment, or both, for submitting false, inaccurate, or incomplete information.

Signed: _____ Date: _____

L. Christopher Heilner, QSTI
Owner
LCH Consulting Associates
Telephone: (484) 252-4335

1.0 EXECUTIVE SUMMARY

Boston Scientific Corporation (BSC) is the leading manufacturing facility producing drug-eluting collars, drug-eluting stents and the leads that treat cardiac arrhythmias and heart failure. The facility uses ethylene oxide to sterilize their products prior to shipment and thus must maintain stack test results. This protocol and resulting stack test and subsequent report aim to satisfy the permit requirements of the newly installed sterilization chamber at BSCI. LCH Consulting Services, LLC (LCH) of Pottstown, Pennsylvania, has been retained to prepare this protocol, perform the compliance stack test and resulting final test report. The following provides contact, facility, permit, and source information:

1.1 CONTACT SUMMARY

Facility (BSC) Responsible Official

Mr. Ariel Gonzalez
Environmental Health and Safety Manager
Boston Scientific/Guidant Corporation
Road 698
Lot No. 12, Suite 156
Dorado, PR 00646-2602
787-226-0671 phone
Ariel.gonzalez@bsci.com

Regulatory Agency (EQB) Contact

Luis R. Sierra Torres, PE
Chief Inspection and Compliance Division
Air Quality Area
Puerto Rico Environmental Quality Board
Air Quality Division
PO Box 11488
San Juan PR 00910
Phone: (787) 767-8181
Fax: (787) 756-5906

Stack Test Contractor

Mr. L. Christopher Heilner, QSTI
Owner
LCH Consulting Services, LLC
88 Glocker Way PMB 287
Pottstown, PA 19465
484-252-4335 phone
chris@lchconsulting.com

1.2 PERMIT AND SOURCE SUMMARY

1.2.1 Applicable Regulation – 40CFR63.360 Subpart O: Ethylene Oxide Emissions Standards for Sterilization Facilities

Permit Number – PFE-26-1114-1195-1-11-O

Process Description – Ethylene Oxide Sterilization Support Manufacture of Medical Devices, comprising; two sterilization chambers to pre-condition, sterilize and aerate product and one LESNI A/S catalytic abatement system

Sterilization Chamber Description – 3 Getinge chambers, G-1, G-2 and G-3; each of 2.81 cubic meter construction using approximately 24 pounds of Ethylene Oxide total (3cycles/day, 4 pounds per cycle, 2 chambers) and heated using steam.

Lesni Catalytic Abatement System Description – Packed compact tower with sump water tank “balancer” and abator catalytic oxidizer.

Control Efficiency – 99.0% removal efficiency

Compliance Parameter – Oxidizer chamber temperature maintained above 140°C (284°F) or manufacturer’s recommended temperatures.

Stack Test Summary – 3 sterilization chambers (without product inside) will be cycled to sterilant removal and held. When the chambers are ready, they will be concurrently evacuated into the Lesni system. As per Subpart O, the sample run will be considered from the beginning of the first evacuation of the first chamber until the conclusion of the first evacuation of the last chamber. However, the subpart does not consider the operation of the Lesni Catalytic Abatement System, specific pertaining to the Water Balancer Tank. In order to best determine compliance demonstration, the following test procedures are proposed.

During the sample run, concentrations of ethylene oxide will be determined by GC/FID and volumetric flow rates will be determined at the outlet of the Lesni system. Inlet concentrations and removal efficiency will be determined by EPA Subpart O calculation. Additionally the Lesni “midpoint” concentration will be monitored by GC/PID. The “midpoint” will be a sampling location after the water balancer tank but before the catalytic oxidizer bed.

Prior to any testing, BSCI shall run the sterilization system for at least one normal cycle to condition the water balancer system to represent normal operating conditions.

All test runs will start approximately one hour prior to a test event. The test event shall mimic a normal event, except that chambers shall be empty.

The runs shall conclude when one of the following conditions are met; the concentration of ethylene oxide can no longer be reliably determined at the exit to the catalytic oxidizer, or the concentration of ethylene oxide measured at the midpoint is approximately equal to the concentration measured during the one hour pre-sterilization event period, or approximately one hour prior to the next sterilization event, using normal operations to determine this time period.

The start time for determining the exit mass of ethylene oxide shall be when the concentration begins to rise as measured at the midpoint. The end time for determining the mass shall be the end of the run, as defined above.

During each run the following process parameters shall be recorded; the catalytic oxidizer temperature (inlet and outlet if available), the pressure drop across the catalytic oxidizer, and the ethylene oxide measurement device values at the outlet of the water balancer and the exit to the catalytic oxidizer.

The concentration values measured at the mid-point and the catalytic oxidizer exit for each run shall be included in the test report.

The following are the proposed test methods to be used:

USEPA Method 1 – Sampling Point Determination and Cyclonic Flow Checks

USEPA Method 2 – Volumetric Flow Rate Determination

USEPA Method 3 – Stack Gas Molecular Weight Determination

USEPA Method 18 – Volatile Organic Compound Determination by Gas Chromatograph

USEPA Method 205 – Verification of Gas Dilution Systems

Subpart O 40CFR63.365 (b) – Calculations

Proposed Test Date – Before End of Second Quarter of 2019

TABLE 1
Boston Scientific Two Chamber LESNI Performance Test
Testing Methodology Summary

Parameter	EPA Method	Comment
Flow	1 and 2	When flow is demonstrated on the outlet stack of the LESNI system, a preliminary Method 1 and 2 compliant flow traverse will be conducted. The resultant ΔP 's will be averaged and the point closest to the average ΔP will be identified. This will be the single point used for outlet flow determinations during sampling runs. With permission from PREQB, we will install a calibrated differential pressure and temperature data logging system to collect minute data nearly continuously during the test program consistent with EPA Subpart O requirements. The absence of cyclonic flow patterns will be verified.
O ₂ and CO ₂	3	30.00 will be used as the stack gas molecular weight.
Ethylene Oxide	18	Onsite gas chromatography (GC) will be used to determine ethylene oxide concentrations. Method appropriate calibration curves and QA/QC measures will be determined and performed onsite previous to and upon completion of the sampling event.

2.0 PROCESS DESCRIPTION

Three chambers manufactured by Getinge AB are used to sterilize medical products. The in-chamber sterilization cycle includes pre-conditioning, sterilization and aeration. The typical cycle for sterilization includes four vacuum and nitrogen injection pulses to remove air, injection of clean steam for humidification, ethylene oxide charge, injection of additional nitrogen, three nitrogen washes i.e. evacuations all of which are vented to the Lesni system.

The Lesni system provides “state of the art” pollution control with a balancer and an abator. The balancer consists of a vessel of water and a packed tower. Water is recirculated through the packed tower where ETO desorbs at a steady rate and for transport to the balancer. Sterilization chamber vent (SCV) gases are sparged directly into the balancer. Concentration at the inlet of the abator are expected to be in the low thousands of ppm to hundreds of ppm.

Lesni maintains a catalyst bed temperature of 150°C (302°F). During normal operations outlet bed temperatures can reach over 400°F due to the exothermic reaction of ETO destruction. A data logger will record inlet and outlet temperature readings for submittal with the final report. Data will be maintained on-site for a five year span.

3.0 SCOPE AND OBJECTIVES

The objective of the testing program is to satisfy the PR EQB Permit PFE-26-1114-1195-1-11-O initial and ongoing compliance testing requirements and to determine compliance with regards to applicable permit allowable limits. Allowable permit limits are summarized on the following page in Table 2.

The performance of the Lesni system will be determined by testing the sterilization chamber vent. The highest concentration at the abator occurs at the start of the initial evacuation. The test procedures of 40CFR63.365 (b) are suitable to demonstrate the compliance status of the Lesni. 63.365(b) reads: *“Efficiency at the sterilization chamber vent. The following procedures shall be used to determine the efficiency of all types of control devices used to comply with 63.362(c) sterilization chamber standard.”*

Subpart O was written based on technologies that destroy ETO immediately as it is exhausted from the chamber. This is not the case with the Lesni system. With the Lesni system, ETO enters the balancer, dissolves in water and is released slowly over time for metered destruction in the catalytic oxidizer. ETO from the first

evacuation is still mostly in solution when it is completed. In this program we propose the following test procedures to most accurately demonstrate permit compliance.

During the sample run, concentrations of ethylene oxide will be determined by GC/FID and volumetric flow rates will be determined at the outlet of the LESNI system. Inlet concentrations and removal efficiency will be determined by EPA Subpart O calculation. Additionally the Lesni “midpoint” concentration will be monitored by GC/PID.

Prior to any testing, BSCI shall run the sterilization system for at least one normal cycle to condition the water balancer system to represent normal operating conditions.

All test runs will start approximately one hour prior to a test event. The test event shall mimic a normal event, except that chambers shall be empty.

All test runs will be the duration as specified by PREQB and EPA Subpart O. The runs shall conclude when one of the following conditions are met; the concentration of ethylene oxide can no longer be reliably determined at the exit to the catalytic oxidizer, or the concentration of ethylene oxide measured at the midpoint is approximately equal to the concentration measured during the one hour pre-sterilization event period, or approximately one hour prior to the next sterilization event, using normal operations to determine this time period.

The start time for determining the exit mass of ethylene oxide shall be when the concentration begins to rise as measured at the midpoint. The end time for determining the mass shall be the end of the run, as defined above.

During each run the following process parameters shall be recorded; the catalytic oxidizer temperature (inlet and outlet if available), the pressure drop across the catalytic oxidizer, and the ethylene oxide measurement device values at the outlet of the water balancer and the exit to the catalytic oxidizer.

The concentration values measured at the mid-point and the catalytic oxidizer exit for each run shall be included in the test report.

TABLE 2
Allowable Limit

Emission Parameter	Allowable Limit
Abator Removal Efficiency	99.0%
Abator Catalyst Inlet Bed Temperature	Temperature maintained above 140°C (284°F) or manufacturer's recommended temperatures.

4.0 FIELD TESTING PROGRAM

4.1 Testing Location and Traverse Points

Sampling for the Lesni will be conducted at the inlet and outlet of the Lesni Abator. The location will be accessed via ladder. Two ports will be used, maximum 8 points per port resulting in a maximum sixteen point traverse. The stack inside geometry will be determined for Method 1 compliant traverse points. A preliminary traverse will yield the point of average velocity. This point of average velocity will be used for flow determinations during each sampling run.

4.2 Testing Summary

Testing will be conducted according to the U.S. EPA Federal Register 40 CFR 60 Appendix A. The following procedures will be utilized at the LESNI exhaust stack.

Procedures¹

- Method 1: Sample and Velocity Traverses for Stationary Sources
- Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate
- Method 3: Determination of Stack Gas Molecular Weight
- Method 4: Determination of Stack Gas Moisture Content
- Method 18: Volatile Organic Compounds by Gas Chromatography

Three test runs will be performed for each emission parameter. Some emission parameters where possible, will be determined concurrently. All test runs will include concurrent gas flow rate determinations by EPA Methods 1, 2, 3, and 4. Regarding Method 3 sampling, this protocol also presents the option to use the molecular weight of 29.00 for test parameters as the chamber atmosphere is essentially ambient air heated thermoelectrically.

Gas flow rate determined by EPA Methods 1, 2, 3 and 4 concurrently with emissions sampling will be used to calculate lb/hr emission rates.

The average of the three test runs will be compared to the allowable emission limits to determine compliance.

Detailed descriptions of the sampling trains, analyzers, and procedures are provided in Section 4.4.

Equations that will be used for test calculations are presented with Protocol Attachments.

4.2.1 Minimum Test Durations and Sample Volumes

Based on previous testing procedures, and analytical and emission results, test runs will have minimum durations and collect approximate sample volumes as specified in the following table.

Table 3

Minimum Test Duration

Emission Parameter	EPA Method(s)	Minimum Test Duration (minutes)
Flow	1-2	Entire duration of first evacuation sequence of both sterilization chambers recorded every five minutes for 60 minutes.

¹Source: U.S. EPA, *Federal Register*, Title 40 Part 60, Appendix A

Molecular Weight	3	Once during the duration of first evacuation sequence of both sterilization chambers recorded once.
Moisture	4	Entire duration of first evacuation sequence of both sterilization chambers and determined for at least 21 dry standard cubic feet and 60 minutes.
Ethylene Oxide	18	Entire duration of first evacuation sequence of both sterilization chambers and determined every five minute for 60 minutes.

4.3 Process Operations and Emission Testing

During each sample run the following process data will be confirmed

1. Catalyst Bed Temperature
2. Amount of Ethylene Oxide Charged
3. Sterilization Cycle Parameters
4. Sterilization Chamber Conditions

4.4 SAMPLING PROCEDURES

The following sections provide descriptions of sampling procedures and the sampling trains that will be used for emissions testing.

4.4.1 Gas Flow and Temperature Measurements

Gas flow rate and temperature profiles will be measured by conducting velocity and temperature traverses simultaneously with each sampling parameter. Gas velocity heads will be measured with a Type-S Pitot or Standard Pitot tube connected to an inclined manometer. The static pressure will be measured using the same Pitot tube and manometer. A Chrome-Alumel thermocouple attached to a digital indicator will be used to measure the gas temperature at each traverse point.

Cyclonic flow checks will be conducted at each test location according to EPA Method 1, Section 11.4. Flow will be considered non-cyclonic if the average flow angle is less than 20 degrees. Results will be available to the PREQB onsite observer and will be included in the final report.

The Lesni system air flow is attained by a variable frequency drive extract fan. EPA Subpart O regulations require delta P's and temperature to be measured every minute for the duration of the test run. The duration of the test run is determined by meeting the conditions outlined by PREQB and could be a continuous run.

To accommodate these requirement we intend to use a commercial produced data logging flow and temperature system. This system will log minute data at least. From this data we will be able to ascertain strict EPA Subpart O methodology and the requirements put forth by PREQB.

4.4.2 Oxygen and Carbon Dioxide Emission Concentration Determinations

Oxygen (O_2) and carbon dioxide (CO_2) emission concentrations could be determined by EPA Method 3 *Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources*. Oxygen and CO_2 emission concentrations will be used primarily for the determination of gas molecular weight required for gas flow rate calculations. For this reason we will not perform any actual molecular weight determinations and Method 3 will be used to assign a molecular weight of 29.00, which is thought to be appropriate as this is essentially thermoelectrically heated air. Molecular weight will be the same at the inlet and the outlet and thus cancel each other out for destruction efficiency calculations.

4.4.3 Moisture Content Sampling

Stack gas emissions to the Lesni are to be considered saturated and moisture content will be determined using a psychometric chart.

4.4.4 Determination of Ethylene Oxide Emissions

Procedures outlined in 40 CFR 60 Methods 18 and Subpart O 40CFR63.365 (b) calculations will be used to determine Ethylene Oxide emission concentrations, and are discussed as follows:

ETO samples will be collected and analyzed using the Direct Interface Sampling and analysis procedure of Method 18 section 8.2.2. An un-heated Teflon sample line and stainless steel sample probe will be placed in the abator outlet stack connecting to a Teflon lined diaphragm pump. A sample rate of approximately 2 liters per minute will be established. A slip stream of approximately 10 milliliters per minute of the sample will be connected to the gas chromatograph sample loop. An analysis will be conducted once per minute for the duration of the test run. This protocol would also like to allow for the option of collecting samples using the techniques outlined in USEPA Method 18 Section 8.2.1.1 and 8.2.1.2 as alternative procedures. In this case the sample train would be constructed illustrated in USEPA Method 18 Figure 18-9 for procedures in Section 8.2.1.1. Section 8.2.1.2 procedures of Method 18 allow for exclusion of the evacuated canister and direct sample pump bag filling.

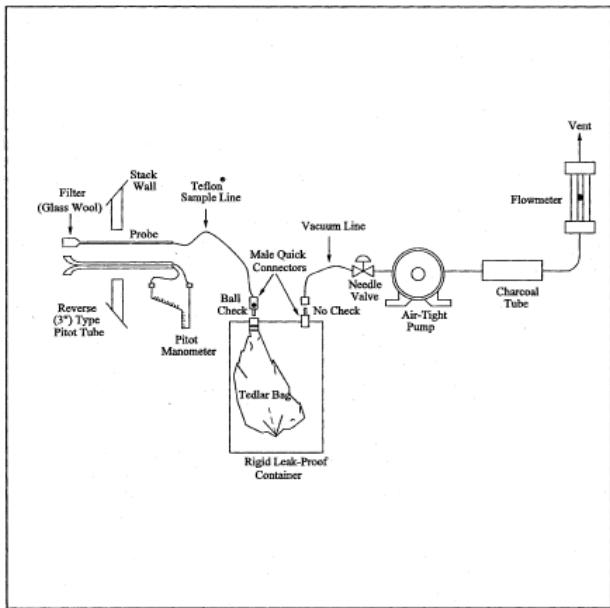


Figure 18-9. Integrated Bag Sampling Train.

4.5 SAMPLE ANALYSES

All samples will be onsite by an experienced LCH technician operating a GC FID and/or PID. All QA/QC measures inherit to the analyzer and the methodology will be followed.

4.5.1 GC Description

Samples will be analyzed by gas chromatography using a SRI 8610C gas chromatograph with dual column, dual detector (PID and FID) with heated sample loops, injectors and 3 meter packed columns. Gas in the sample loop is injected directly into the GC's analytical columns by the gas sampling valve. The GC will be operated with carrier gas flow of 15 to 18 ml/minute and column temperature of 100°C. The carrier gas is ultra-high purity helium. Hydrogen and air are used to maintain the FID. ETO will elute at 1-2 minutes.

4.5.2 Calibration Standards

Four cylinders of calibration standard, ETO in nitrogen, in concentrations of 1, 10, 100 and 1000 ppm will be used to create a calibration curve to calculate ETO concentration in ppm given instrument response in millivolts. Calibration standards will be analyzed in triplicate and the average value of the samples will be calculated. An analytical result is considered valid if its value is within 5% of the average value. Additional calibration gas concentrations will be created, if needed, using a mass-flow meter based dilution system where known quantities of zero gas and high concentration ETO standard are introduced sequentially into a clean Tedlar bag. If additional standards are needed the Method 205 field evaluation procedure will be conducted.

A calibration curve will be generated using Microsoft Excel chart function by constructing a linear XY-Scatter graph that solves the quadratic equation of the line $Y=mX+b$ where “y” is the calculated concentration of EtO, “x” is the instrument response, “m” is the constant and “b” is the y-coordinate intercept. The option forcing the graph through zero will be enabled so “b” = zero. The least squares R^2 value and the equation of the line will be shown. An R^2 value of 95% is acceptable according to Method 18. The gas chromatograph routinely exceeds the 95% R^2 value.

4.5.3 Chromatograms

The chromatogram log sheet is a Microsoft Excel spreadsheet that transposes run information in an easy to read format and also provides the calculating capabilities to assess the QA/QC requirements of the method. The chromatograms are logged by the file path directory of the hard drive storage.

The chromatograms are automatically printed at the conclusion of each analysis in .pdf format. Each chromatogram includes information identifying the type of analysis, i.e. set up, calibration, sample, recovery study, date and time of analysis, comments, retention time and integrated peak area. The results are in units of millivolts. Field corrections will be initiated by the operator.

4.5.4 QA/QC Measures

4.5.4.1 Calibration Drift Assessment

The mid-range calibration standard will be analyzed at the conclusion of testing and the results will be compared to the initial analysis to determine if calibration drift has occurred. A 5% deviation between results is allowable. Should excessive calibration drift be observed all calibration standards will be re-analyzed and a new calibration curve using all of the pre-test and post-test data will be generated following the procedures of Method 18. The SRI gas chromatograph has historically met the 5% criteria.

4.5.4.2 Direct Interface Sampling Train Recovery Study

Once the initial calibration standards have been recorded the mid-range standard will be introduced at the probe end of the sample train to compare results to the initial readings. A deviation of 10% is allowable. If the results show a deviation greater than 10% the sample train will be checked for leaks or other causes and analysis will be repeated. The sample trains have historically met the 10% criteria.

4.5.4.3 Bag Sampling Recovery Study

If the procedures for the bag sampling and analysis in section 8.2.1 are followed the following procedure will be used. After analyzing all three bag samples, one of the bag samples will be chosen and tagged as the spiked

bag. The chosen bag sample will be spiked with a known mixture (gaseous or liquid) of all of the target pollutants. The theoretical concentration, in ppm, of each spiked compound in the bag shall be 40 to 60 percent of the average concentration measured in the three bag samples. If a target compound is not detected in the bag samples, the concentration of that compound to be spiked shall be 5 times the limit of detection for that compound. The spiked bag will be stored for the same period of time as the bag samples collected in the field. After the appropriate storage time has passed, the spiked bag will be analyzed three times. The average fraction recovered (R) of each spiked target compound will be calculated with the equation in section 12.7 of Method 18.

For the bag sampling technique to be considered valid for a compound, $0.70 \leq R \leq 1.30$. If the R value does not meet this criterion for a target compound, the sampling technique is not acceptable for that compound, and therefore another sampling technique shall be evaluated for acceptance (by repeating the recovery study with another sampling technique). Report the R value in the test report and correct all field measurements with the calculated R value for that compound by using the equation in section 12.8. LCH intends to use Teflon sample bags in lieu of Tedlar sample bags because of the superior results found in recovery studies.

5.0 DATA EVALUATION AND REPORT PREPARATION

5.1 EMISSION CALCULATIONS

The destruction removal efficiency is calculated using the mass of ETO evacuated from the chamber and the mass at the outlet of the abator. The mass of ETO at the inlet of the balance will be calculated following the procedures of Subpart O section 63.365(b).

Emissions will be calculated according to the appropriate EPA methodologies. Equations are presented in the Protocol Attachments.

5.2 REPORT PREPARATION

Testing and pertinent operating data will be reviewed by BSC to prepare a full comprehensive test report, including but not limited to, the following:

1. Brief description of work undertaken for complete and incomplete test runs and an outline of sampling techniques employed;
2. An Executive Summary, which includes a summary table and discussion comparing actual emissions with allowable emission limits specified in Section 3.0 of this protocol.
3. Facility information;

4. Source description and actual site information (diameters, dimensions, etc.);
5. All raw field sampling data generated during testing;
6. Equations utilized in calculating test results;
7. All operating data, listed in Section 4.3 of this protocol, recorded during testing;
8. Equipment calibration records.

ATTACHMENT A
EQUATIONS

Equation 1: Outlet ETO concentrations

$$W_o = (Q * \text{Mol.Wt.} * C) / (10^6 * \text{Mol.Vol.})$$

Where:

W _o	=	Mass of EtO released from abator to atmosphere
Q	=	Total volume of gas at the outlet of the abator (scf)
Mol.Wt.	=	Molecular Weight of ETO 44.05 (lb/lb-mol)
C	=	Concentration EtO in sample (ppmv)
Mol.Vol.	=	Molar volume: 385.32 scf/lb-mol at STP
10 ⁶	=	Conversation factor for parts per million

Equation 2: Mass Emission Rates

$$Q = T * (1 - B_{ws}) * V_s * A * ((T_{std} * P_s) / (T_s * P_{std}))$$

Where:

T	=	Duration of test in minutes
B _{ws}	=	Water vapor proportion by volume
V _s	=	Stack gas velocity in feet per second
A	=	Cross-sectional area of the stack in SQFT
T _{std}	=	528(°R) - standard temperature
P _s	=	Absolute stack Pressure ("Hg)
T _s	=	Stack Temperature (°R)
P _{std}	=	29.92" Hg - standard pressure

Equation 3: Destruction/Removal Efficiency

$$DRE = [(W_i - W_o)/W_i] * 100$$

Where:

W _i	=	Mass of EtO at inlet of balance, Subpart O Calculation
W _o	=	Mass of EtO at outlet of the abator

